



THE
CYCLOPÆDIA;
OR,
Universal Dictionary
OF
ARTS, SCIENCES, AND LITERATURE.

PLATES. VOL. III.
HYDRAULICS — NAVAL ARCHITECTURE.

THE
CYCLOPÆDIA;
OR,
UNIVERSAL DICTIONARY
OF
Arts, Sciences, and Literature.

BY
ABRAHAM REES, D.D. F.R.S. F.L.S. *S. Amer. Soc.*

WITH THE ASSISTANCE OF
EMINENT PROFESSIONAL GENTLEMEN.



ILLUSTRATED WITH NUMEROUS ENGRAVINGS,
BY THE MOST DISTINGUISHED ARTISTS.

PLATES. VOL. III.
HYDRAULICS — NAVAL ARCHITECTURE.

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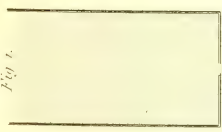


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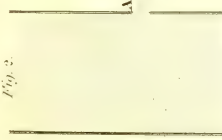


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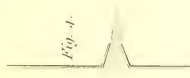


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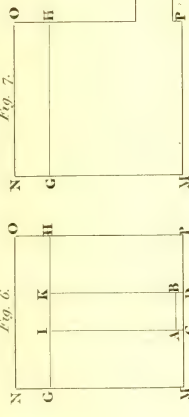


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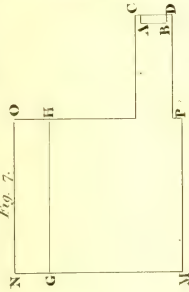


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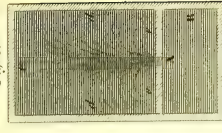


Fig. 7.



Fig. 8.

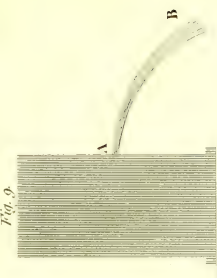


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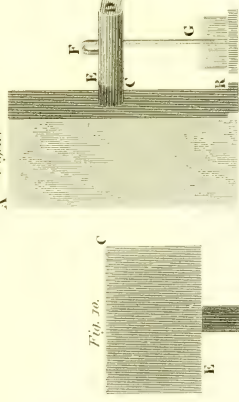


Fig. 10.



Fig. 11.



Fig. 12.



Fig. 13.



Fig. 14.



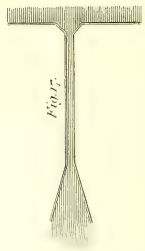
Fig. 15.



Fig. 16.



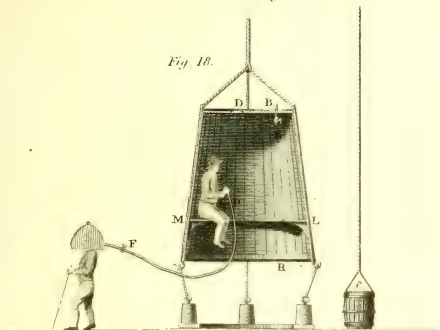
Fig. 17.



DIVING BELL.

D^r Halley's.

Fig. 18.



*Section of Spalding's,
Diving Bell.*

Fig. 20.

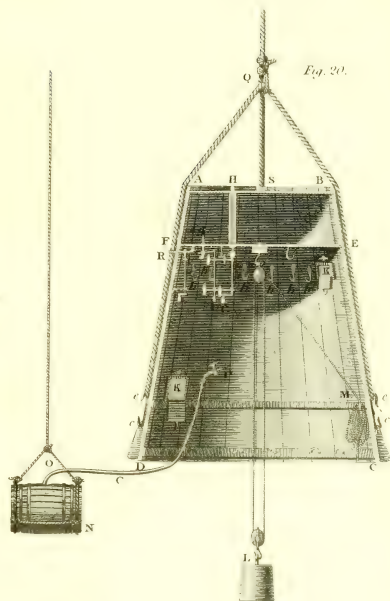
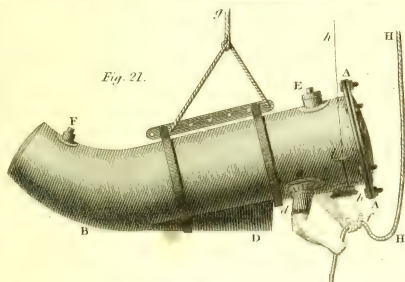


Fig. 21.



Klingert's Diving Machine.

Fig. 22.

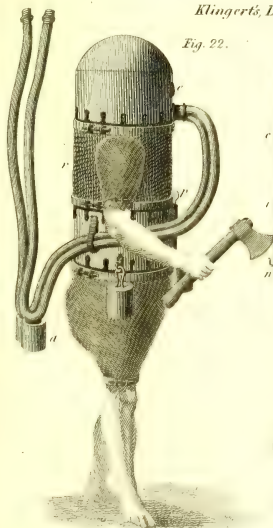


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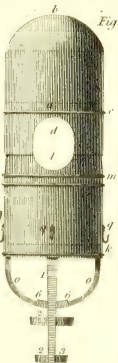
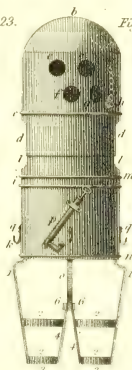


Fig. 25.



Section of Tricwald's Diving Bell.

Fig. 19.

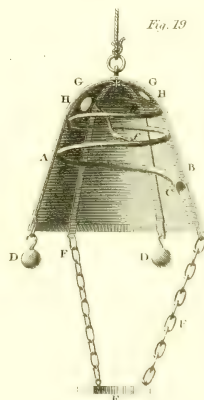


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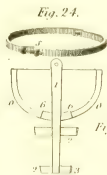


Fig. 27.

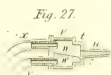
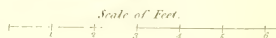


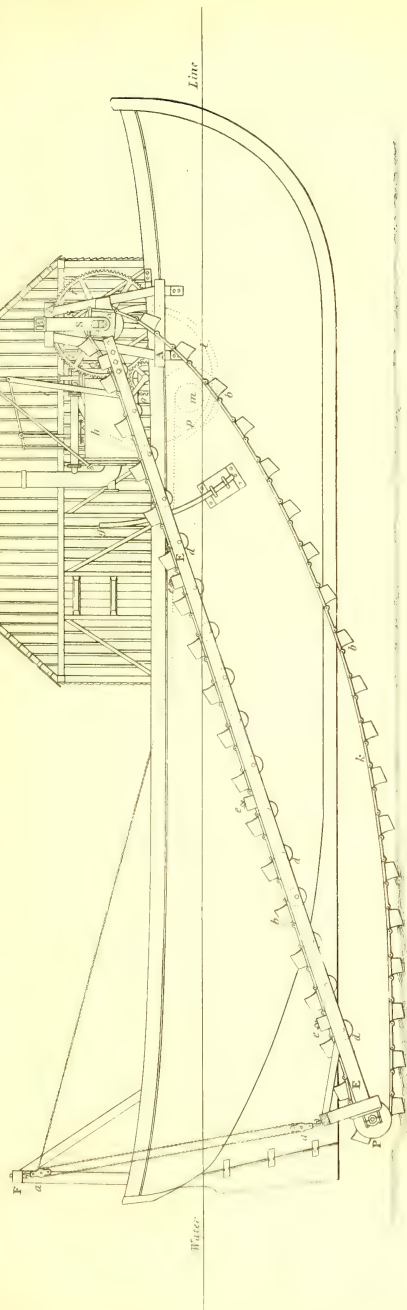
Fig. 26.





Dredging machine used on the River Thames to deepen the channel.

Elevation Fig. 1.



Plan Fig. 2.

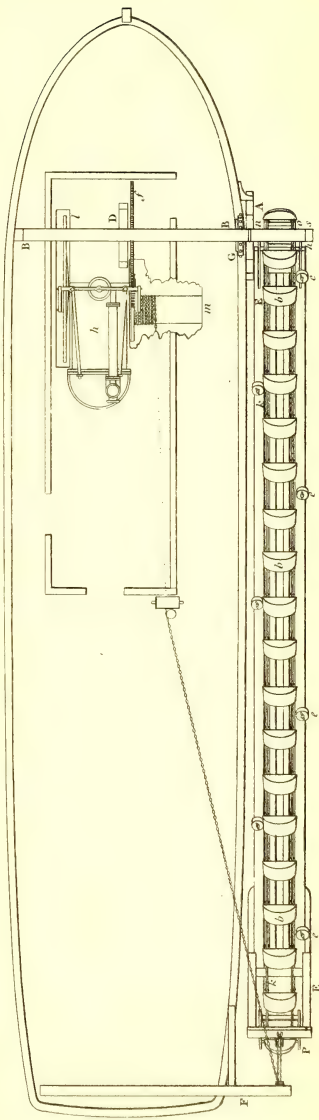




Fig. 9.



Fig. 10.



Y X

Y X

Fig. 11.



Fig. 7.

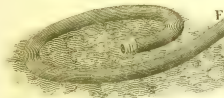


Fig. 3.
EDDY.

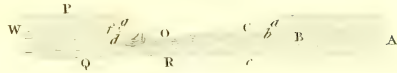
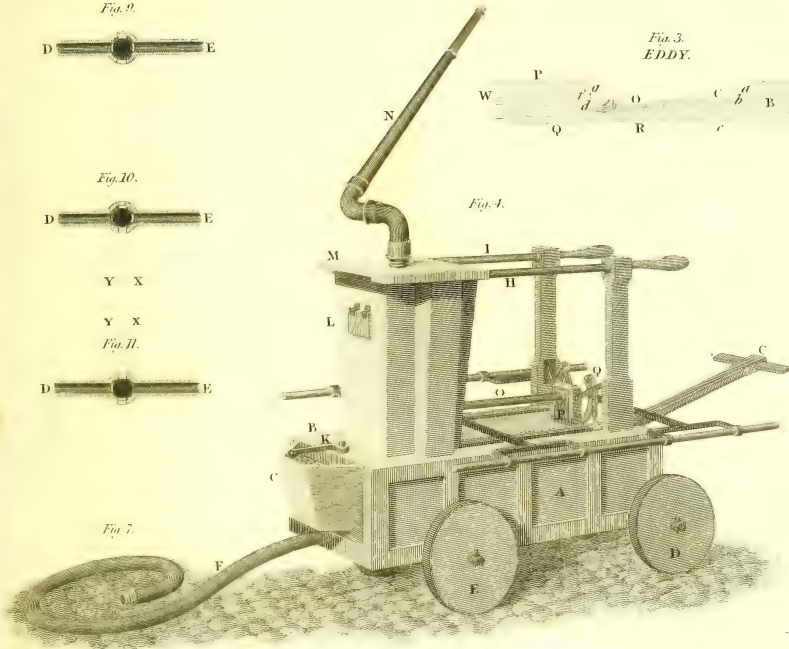


Fig. 4.



M^r Newham's Fire Engine.

Fig. 6.

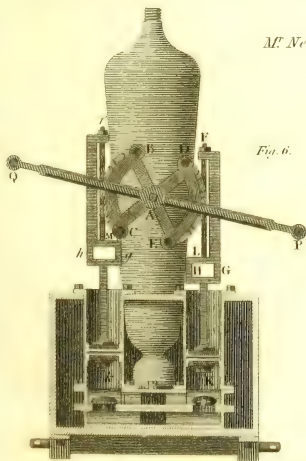
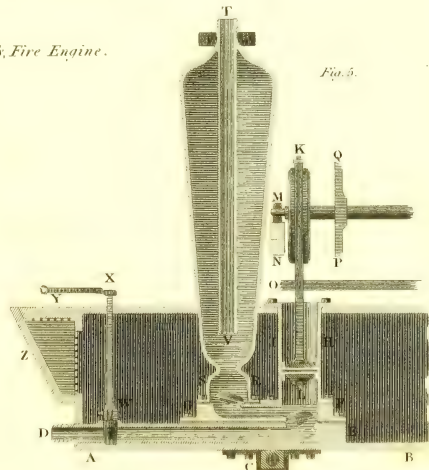
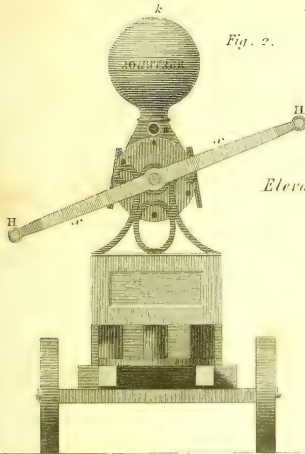


Fig. 5.



Fire Engine by Rowntree.

Fig. 2.



Elevations

Fig. 1.

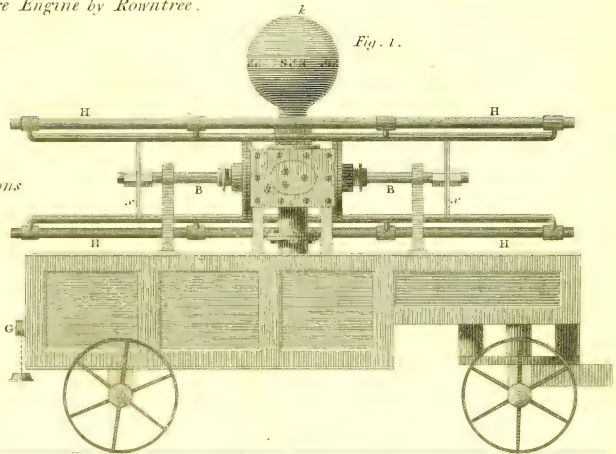
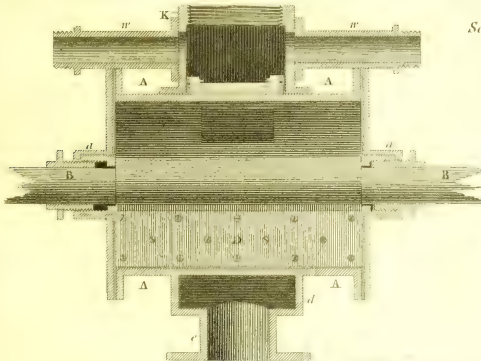
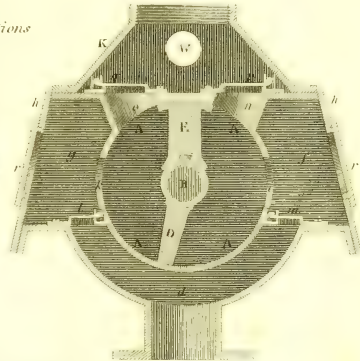


Fig. 3.



Sections

Fig. 4.



Valve



Valve Seat

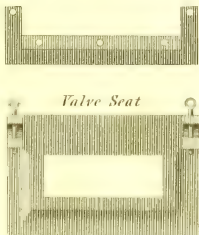


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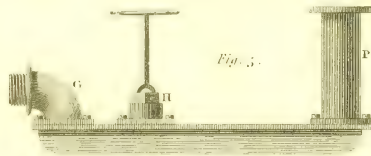


Fig. 6.



Fig. 1.

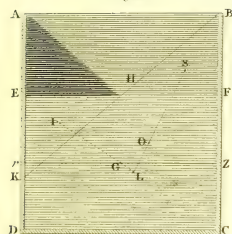


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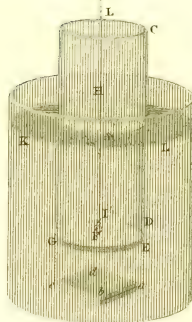


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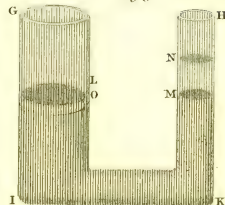


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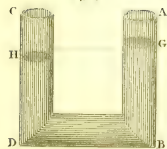


Fig. 5.



Fig. 6.

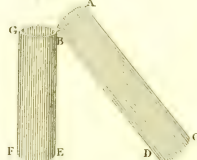


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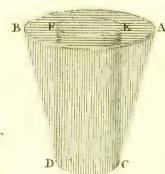


Fig. 8.

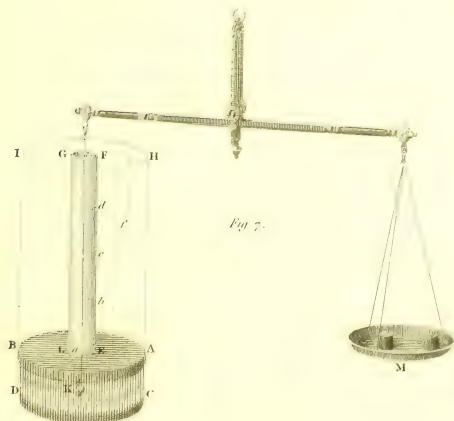
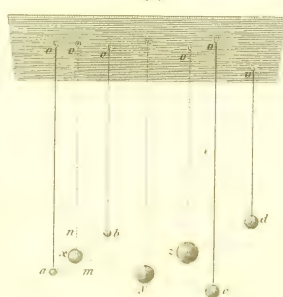


Fig. 9.



FLUIDS.

Fig. 1.

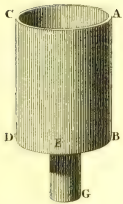


Fig. 2.



Fig. 3

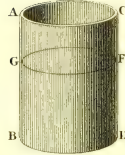


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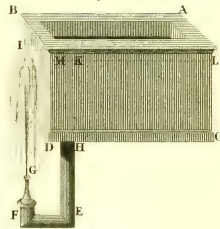


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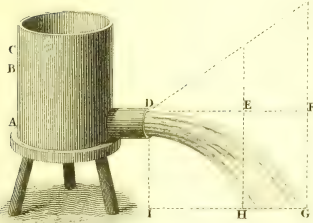
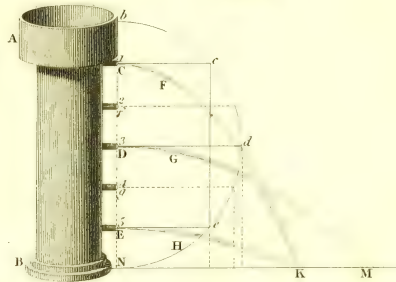


Fig. 6.



FOUNTAIN

Fig. 7.



Fig. 8.

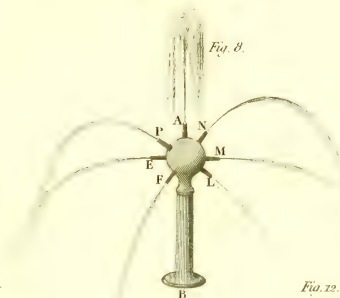


Fig. 9.



Fig. 10.



Fig. 12

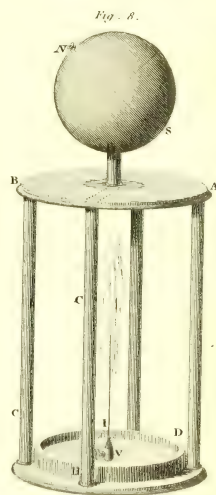
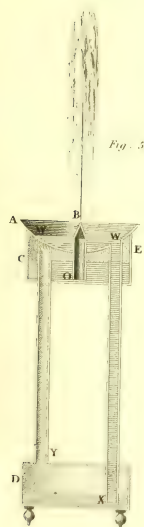
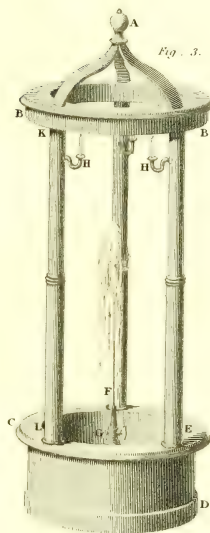


Fig. 13.



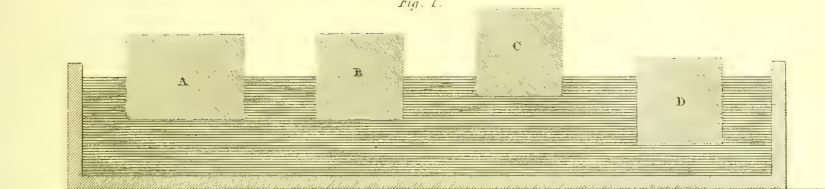
Fig. 11



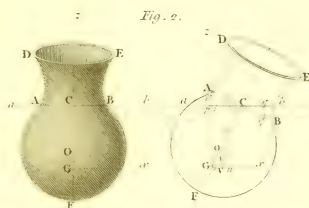
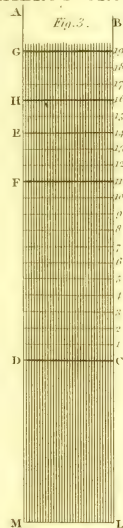


FLOATING.

Fig. 1.

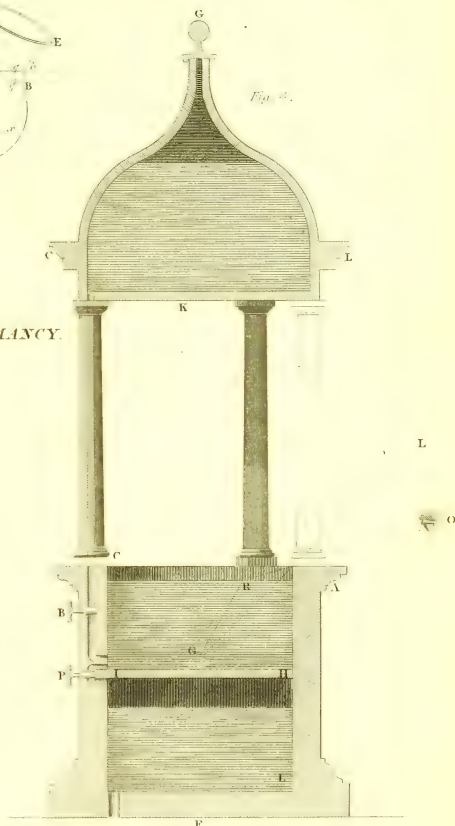
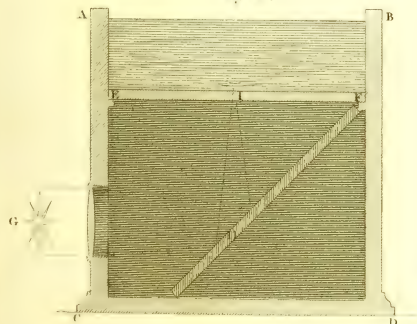


HIERO'S CROWN.

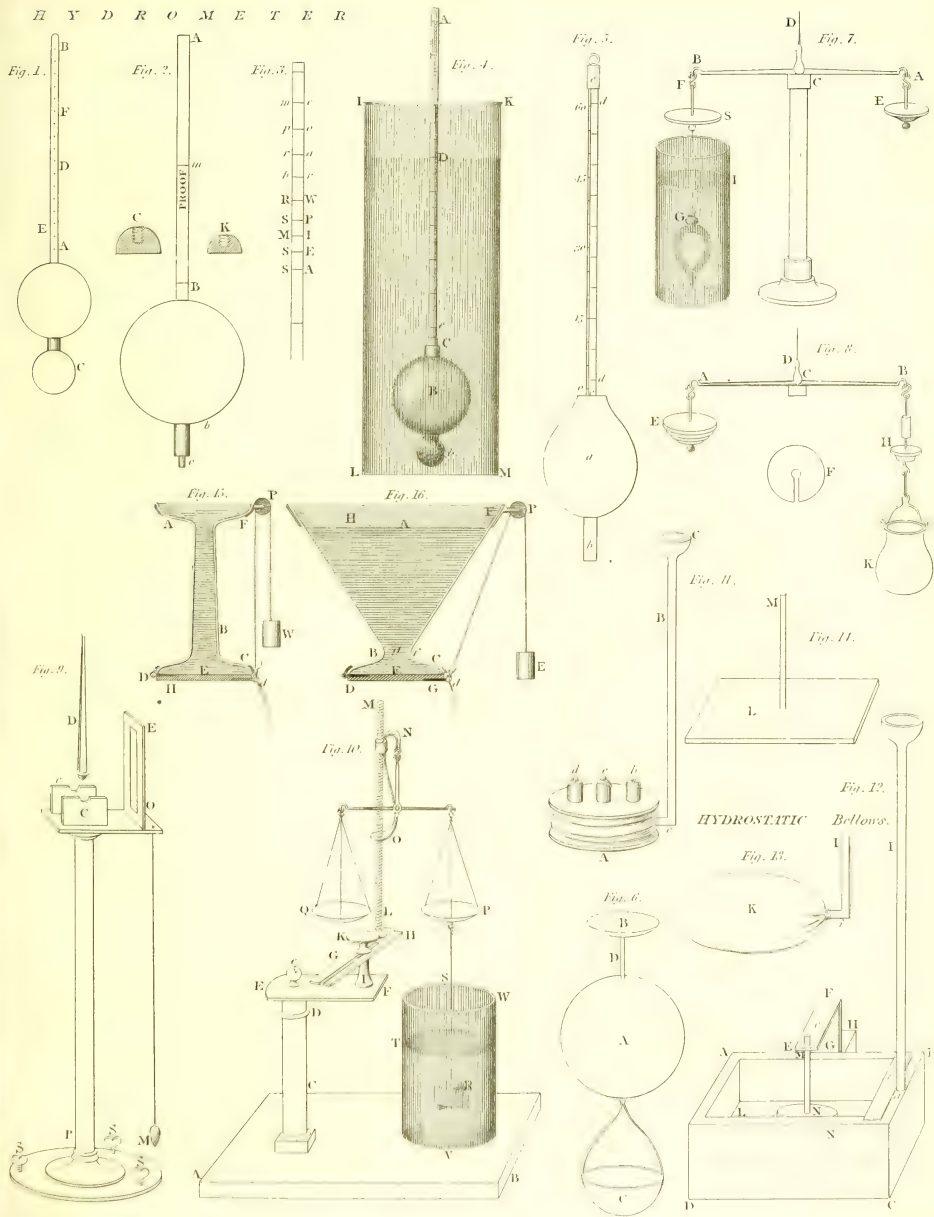


HYDROMANCY.

Fig. 3.



HYDROMETER



Bradford's HYDROSTATICAL Instrument. Fig. 14.

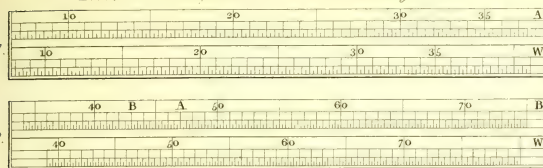


Fig. 1.

Fig. 2.

Fig. 4.

Fig. 11.

Fig. 8.

Fig. 7.

Fig. 12.

Fig. 13.



PL. XIII.

Fig. 1.

Fig. 1.

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Fig. 1.

Fig. 1.

Fig. 14. A. 7.

Fig. 3.

Fig. 5.

Fig. 10.

Fig. 9.

Fig. 9.

Fig. 3.

Fig. 4.

Fig. 5.

HYDRAULICS.

PLATE XV

HYGROMETER.

De Luc's Whalebone Hygrometer.

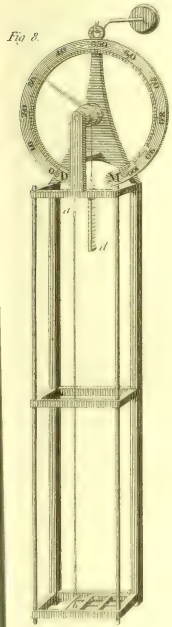
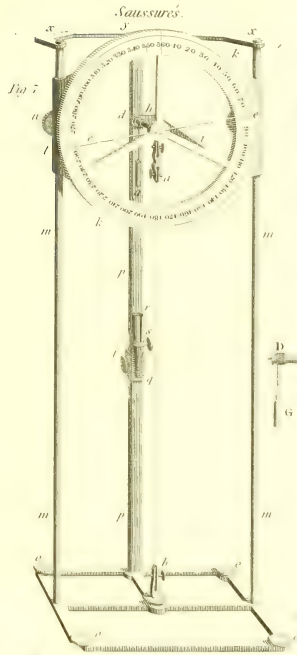


Fig. 9.



De Luc's.

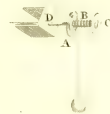
Fig. 6.



Fig. 3.

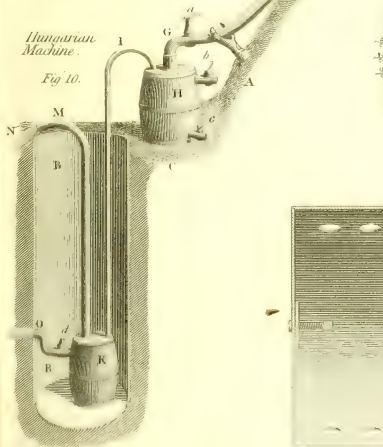


Fig. 4.



Hungarian Machine.

Fig. 10.



Versar's Hygrometer.

Fig. 11.



Kater's Hygrometer.

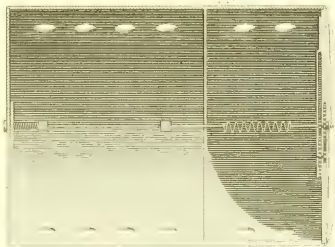
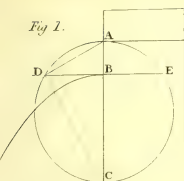


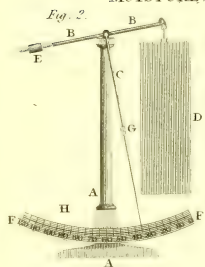
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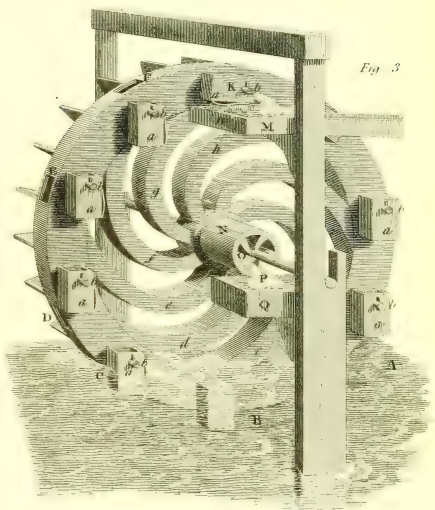
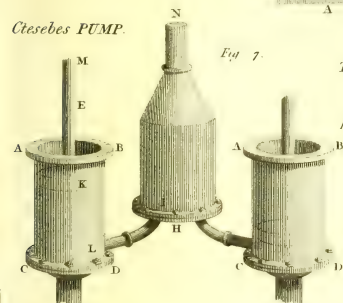
JET d'eau.



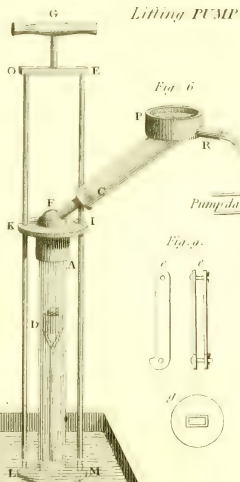
MOISTURE.



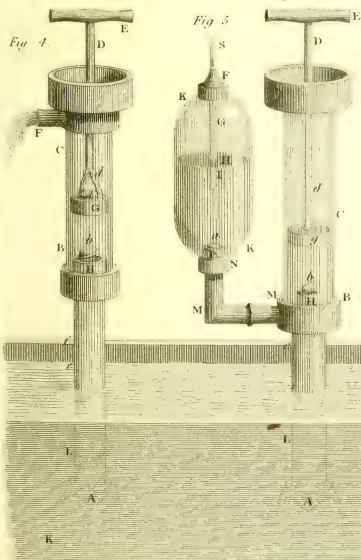
PERSIAN Wheel:

*Ctesebes PUMP.*

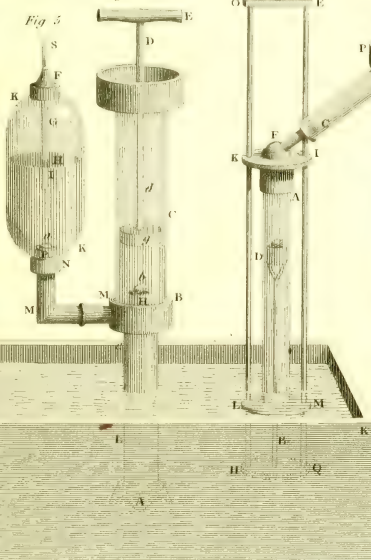
TANTALUS'S Cup.

*Lifting PUMP*

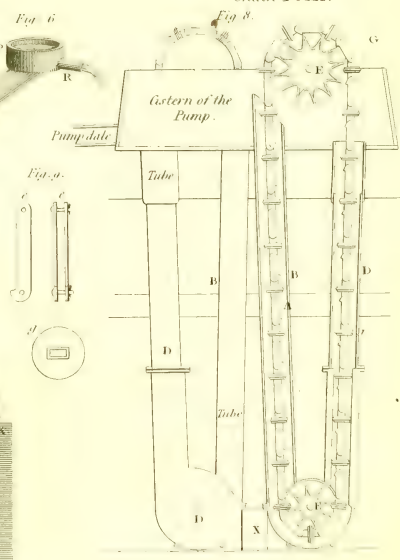
Sucking PUMP.



Forcing PUMP.



Chain PUMP.



SIPHON.

PLATE IV.

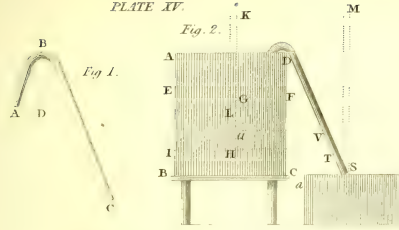
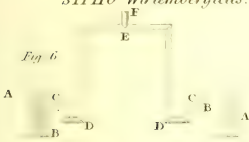


Fig. 3.

Fig. 4.

Fig. 5.

SIPHON Württembergicus.



SPRINGS.

Fig. 7.

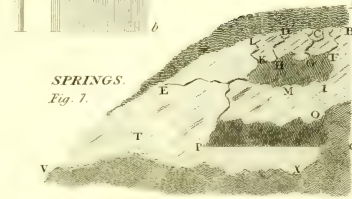


Fig. 8. SYRINGE.



Fig. 10.

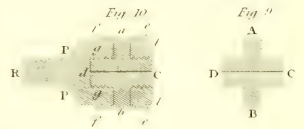


Fig. 9.



Fig. 12.

Fig. 13.

WAVE.

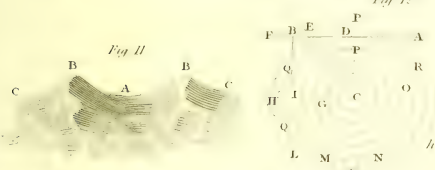


PLATE III. ROPE Pump

Fig. 10.

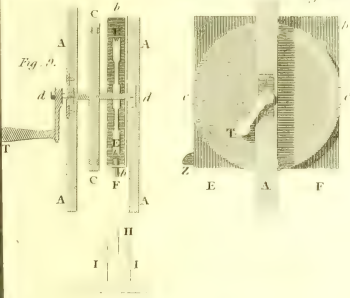


Fig. 12.

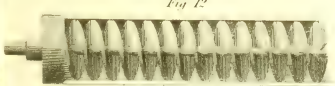


Fig. 13.



Archimedes's SCREW

Fig. 11.

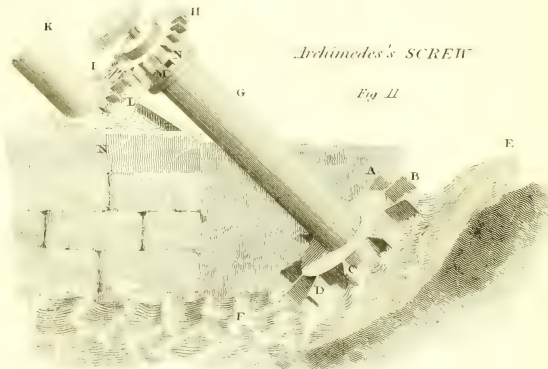
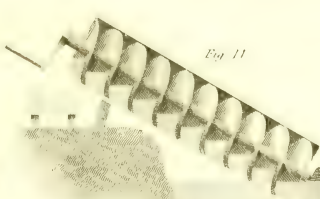
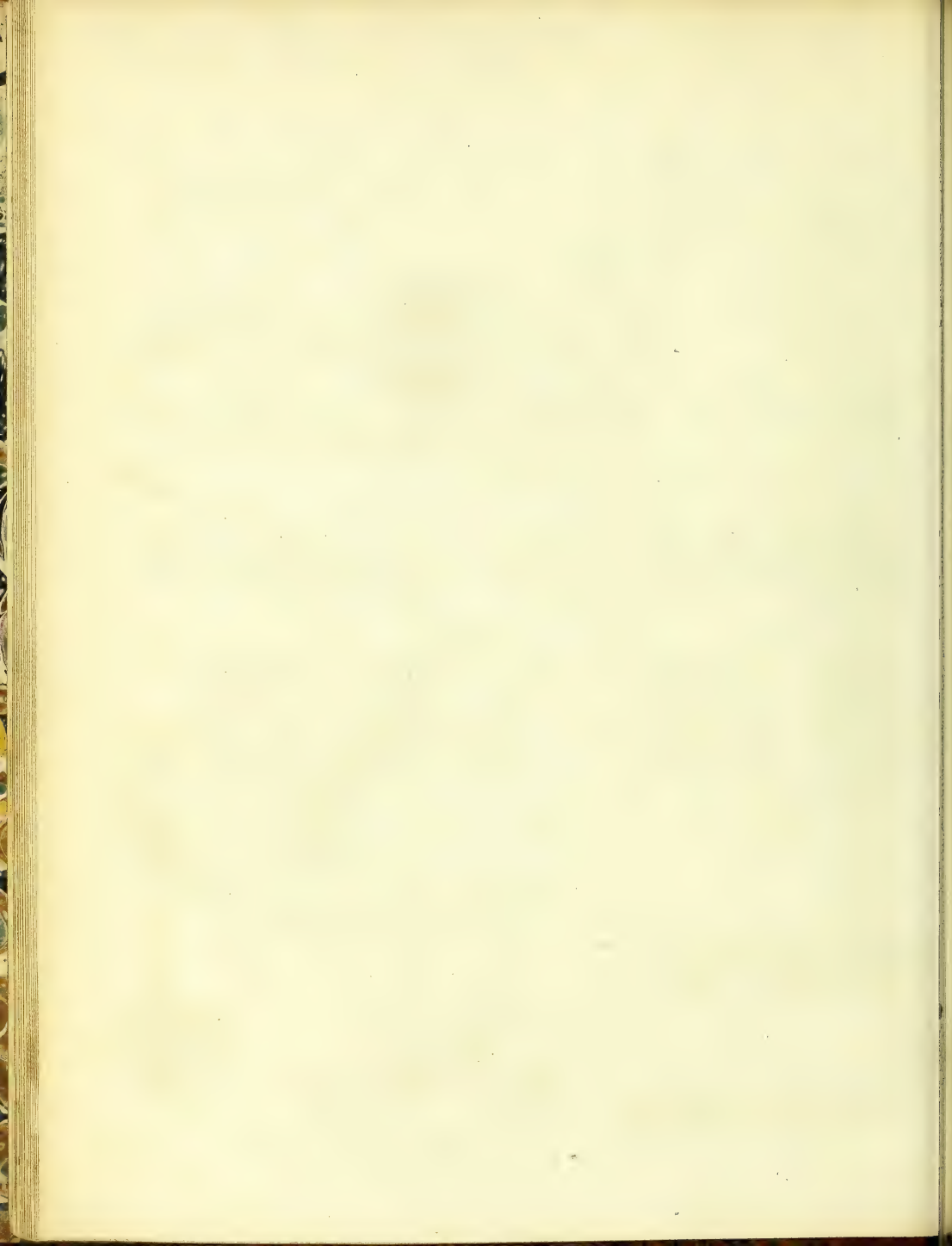


Fig. 15.

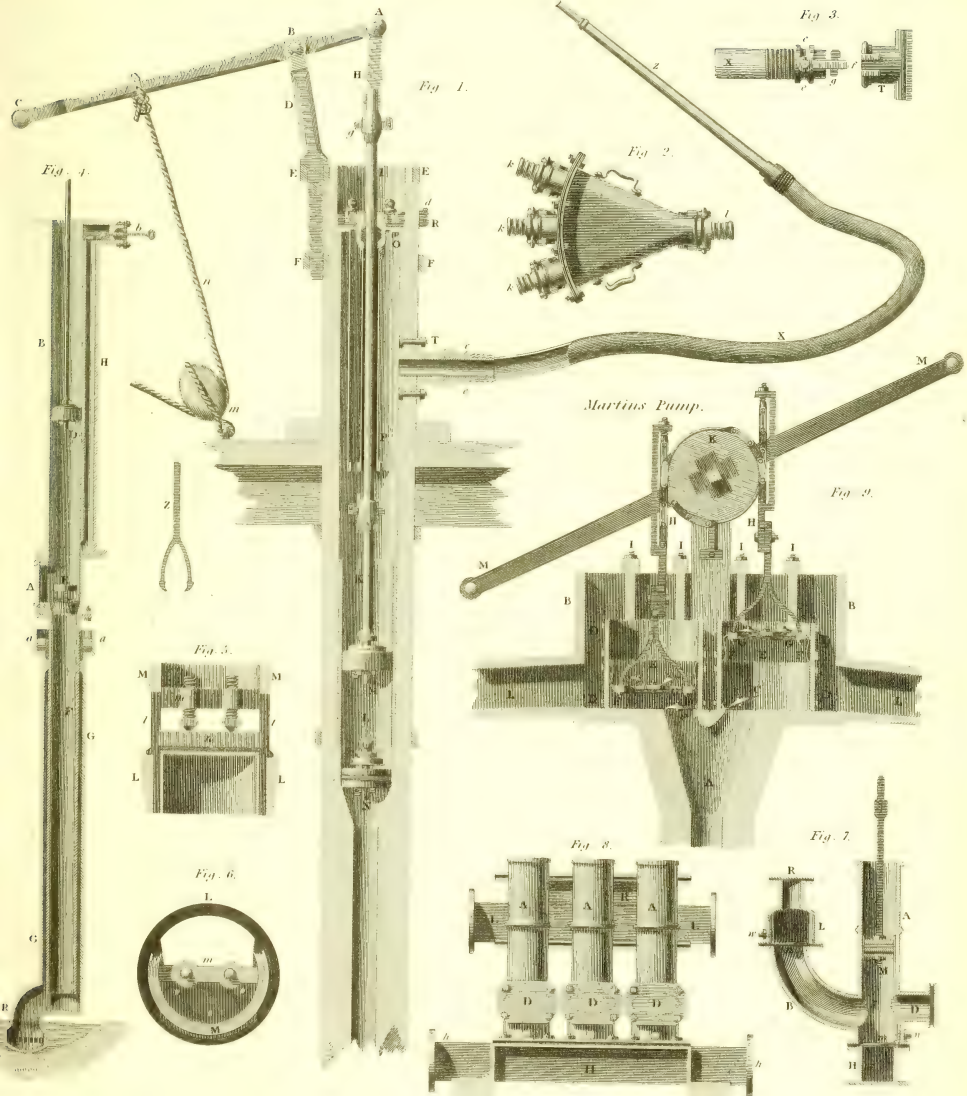


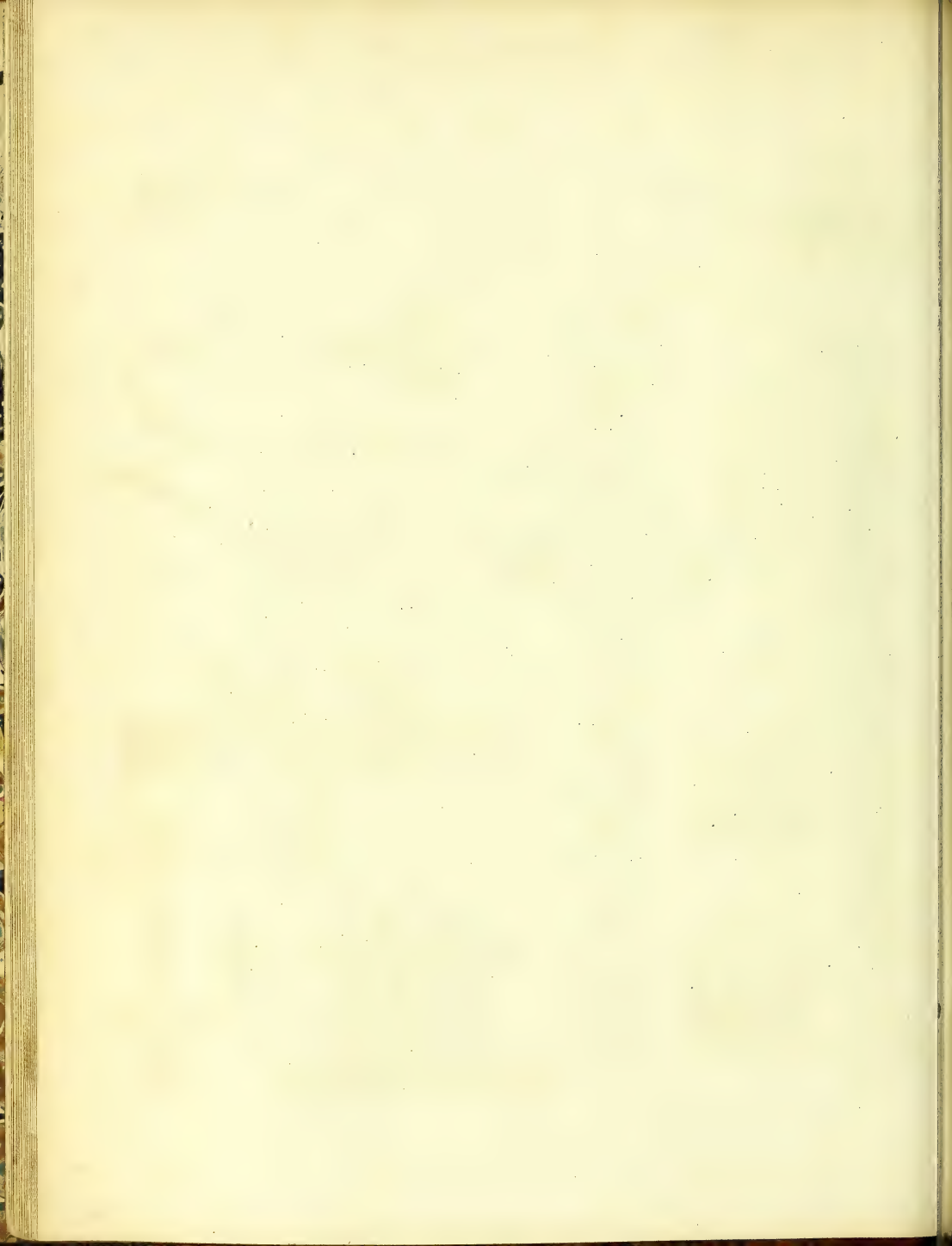
Fig. 11.

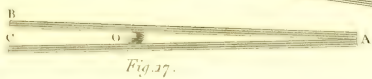
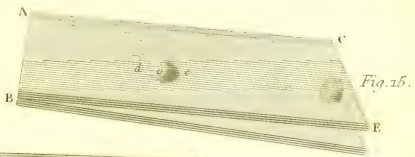
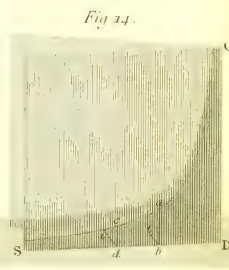
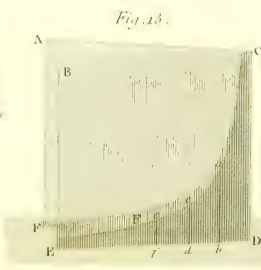
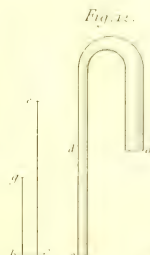
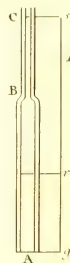
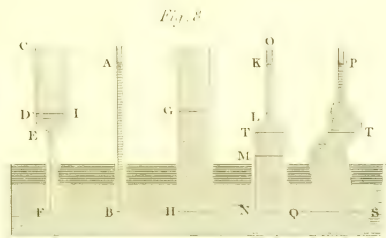
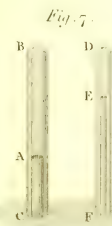
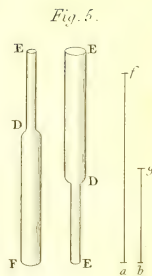
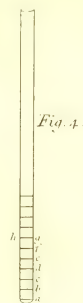
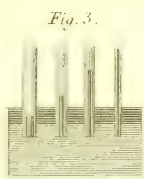
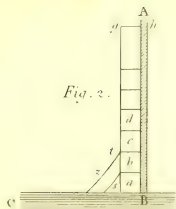
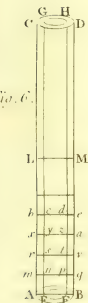


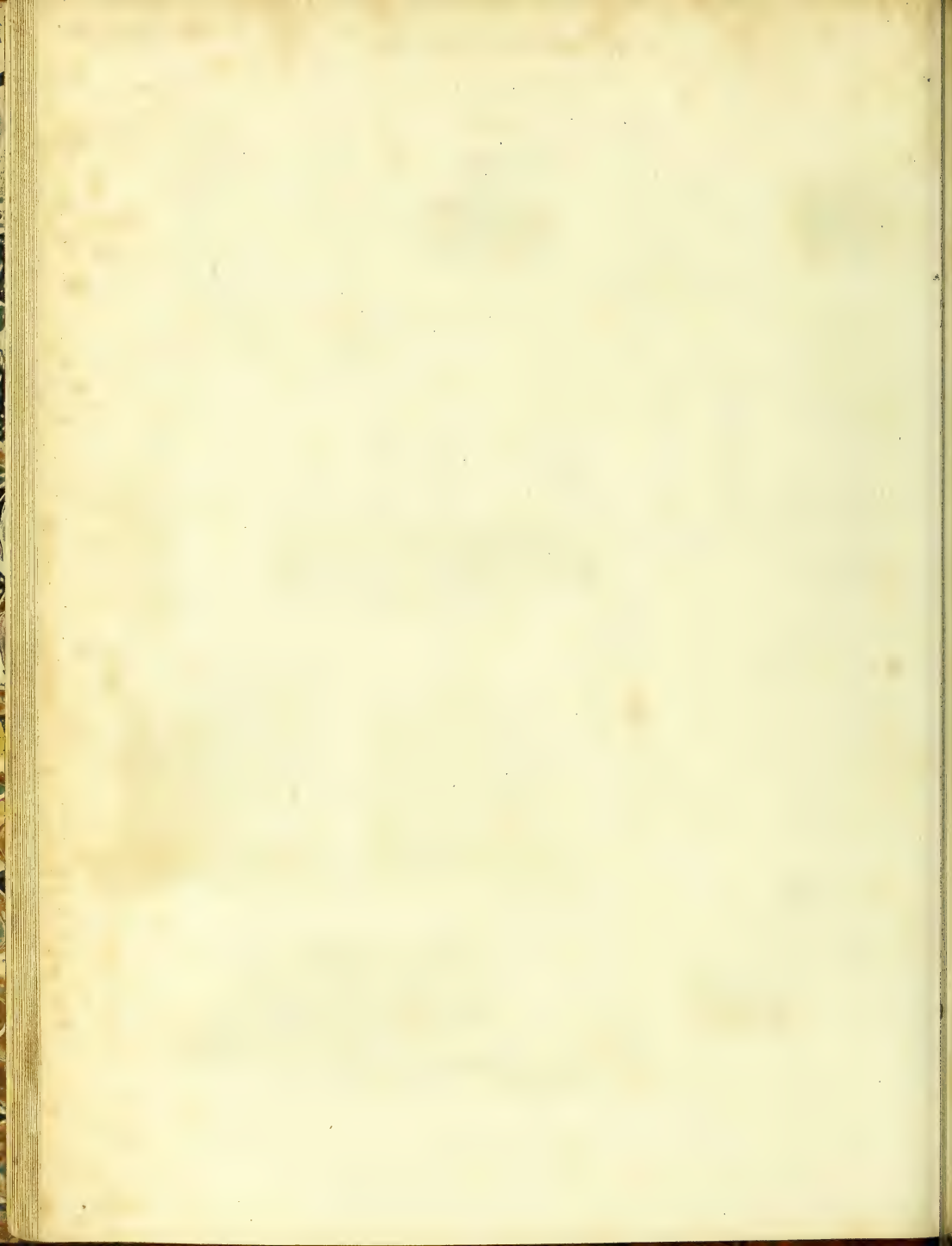


Cap^t Jekyls, improved Ships Pump.





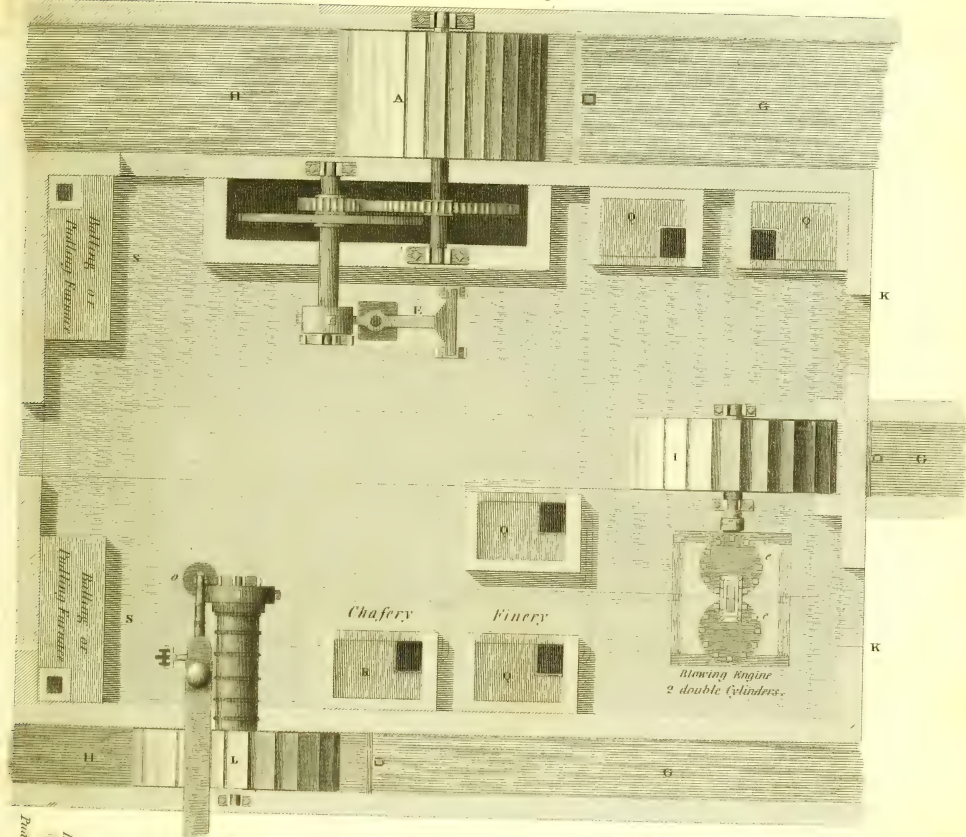




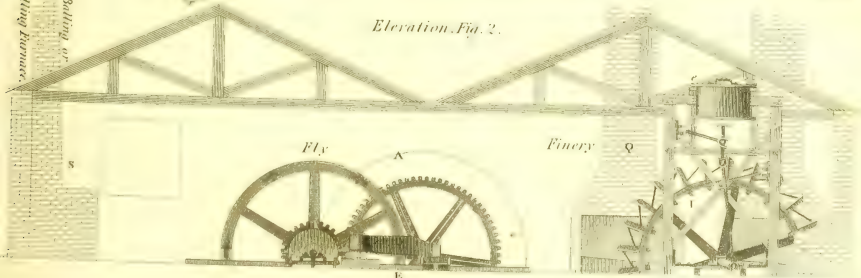
IRON MANUFACTURE.

PLATE I

Fig.1. Plan of an Iron Forge.



Elevation, Fig. 2.



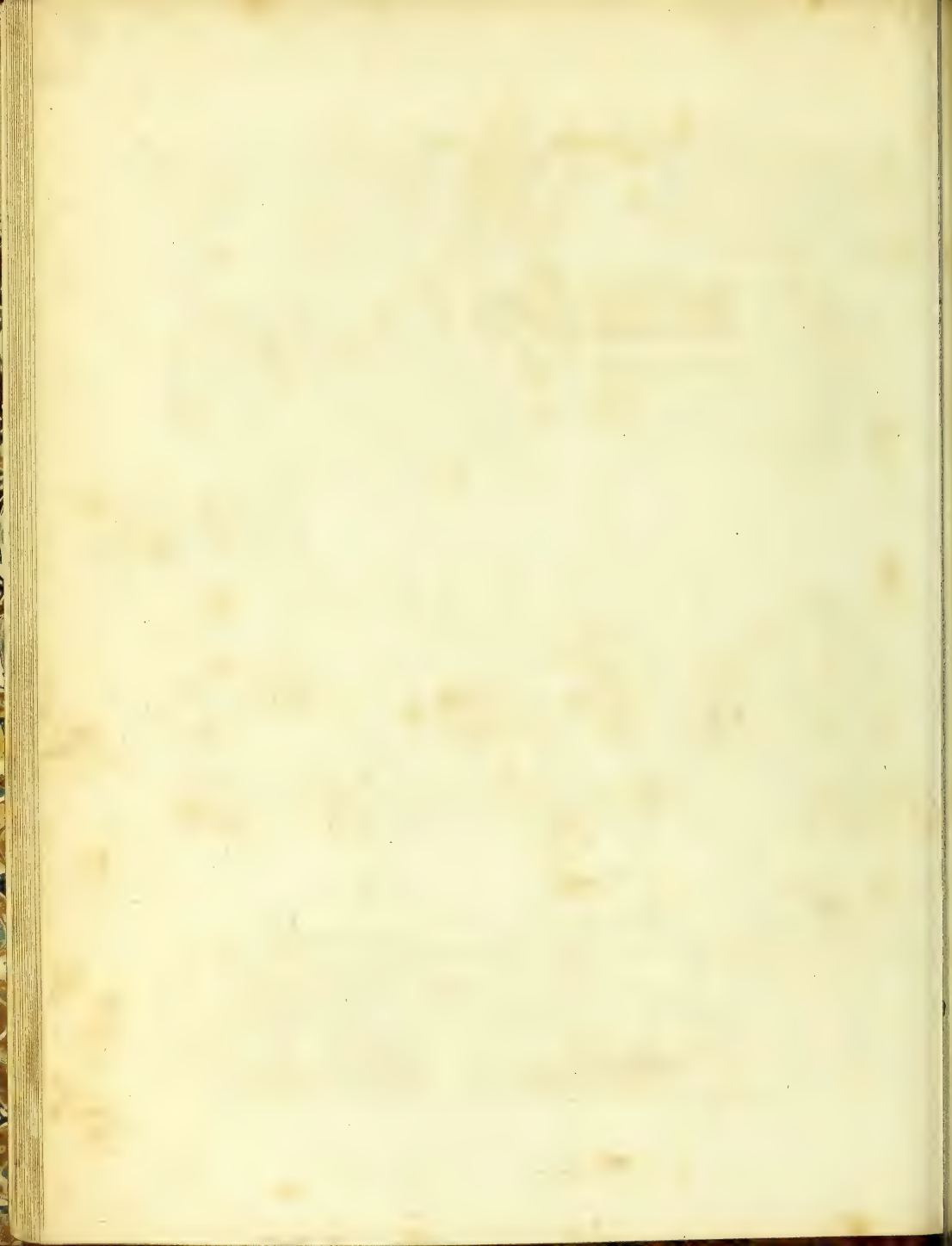


Fig. 2.

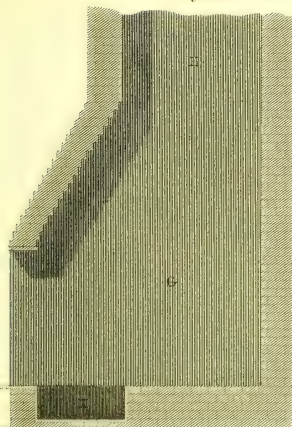
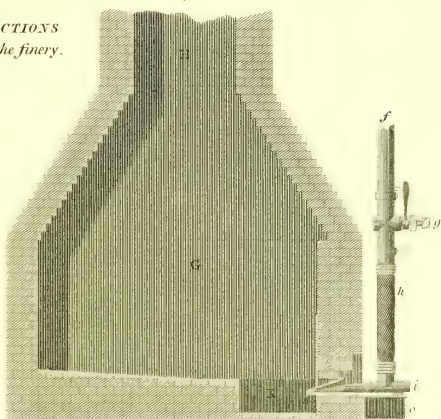


Fig. 1.



SECTIONS
of the finery.

Scale of Feet.

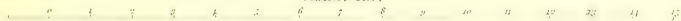


Fig. 1.

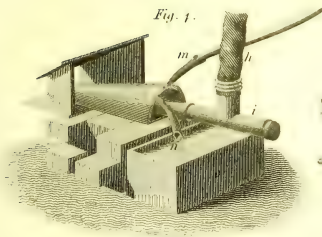


Fig. 3.

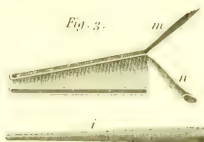


Fig. 5.

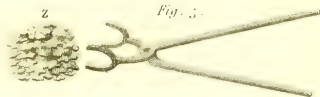


Fig. 6.



Fig. 7.



Fig. 9.



Fig. 8.



BALLING FURNACE.

Fig. 11.

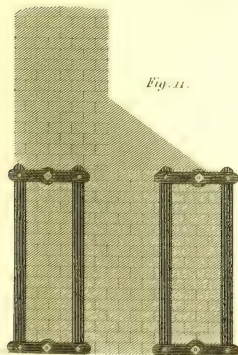
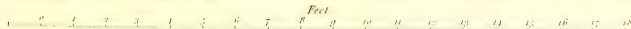
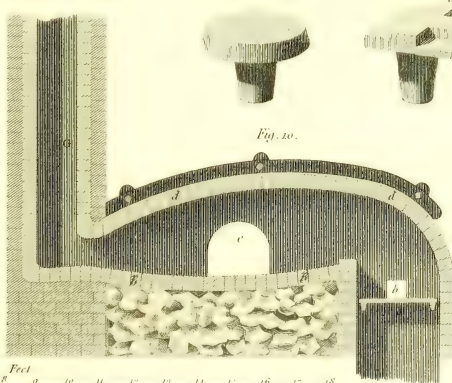


Fig. 10.



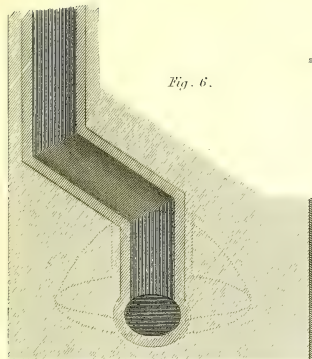


Fig. 6.

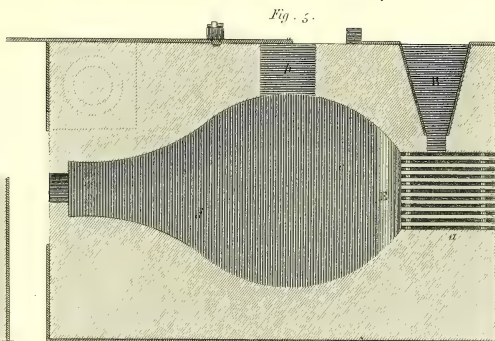


Fig. 5.

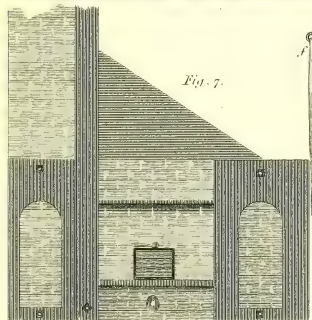


Fig. 7.

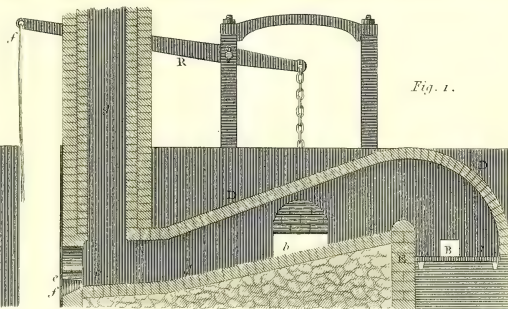


Fig. 1.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 Feet

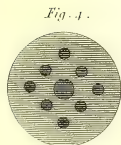


Fig. 4.



Fig. 5.

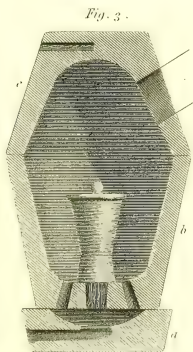


Fig. 3.

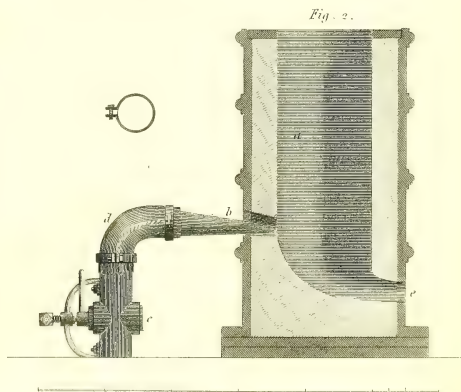


Fig. 2.

M^r Smeaton's design for the Machinery of the Hammer at Kilmhurst Forge.

Fig. 1.

Elevation in Front.

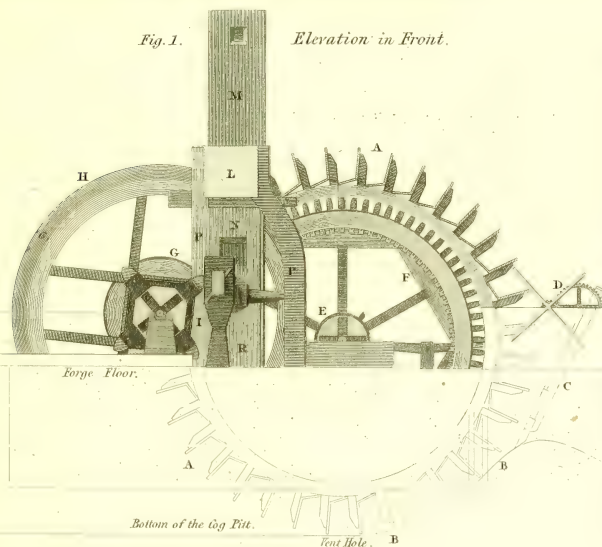
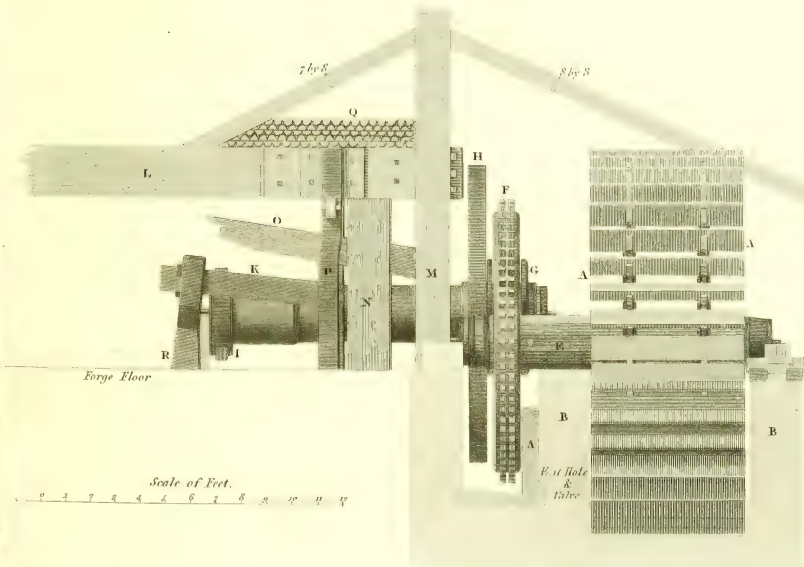
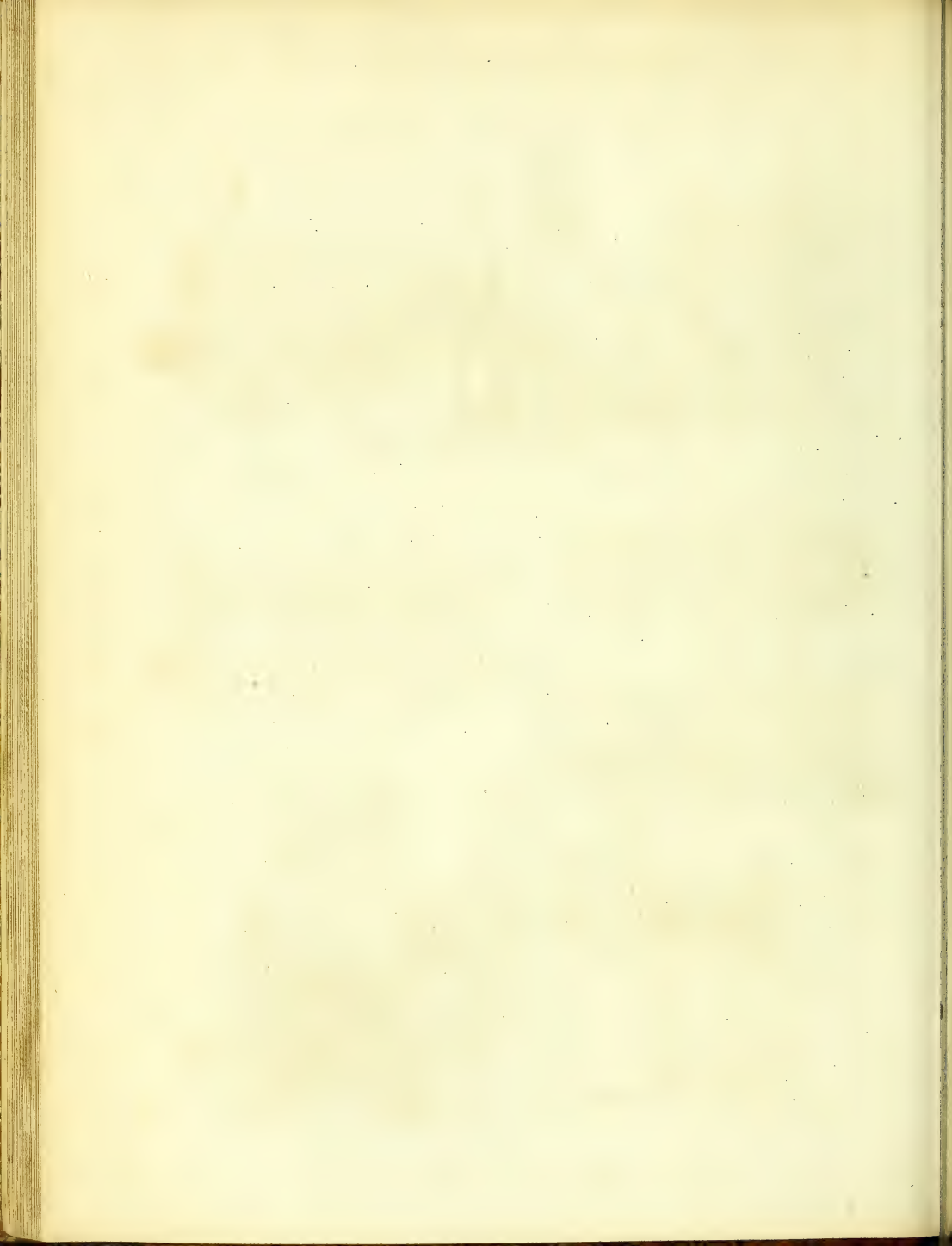


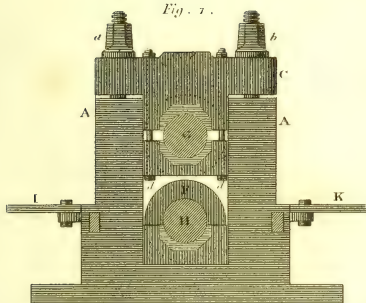
Fig. 2. *Elevation Sideways.*





ROLLERS for making BAR IRON.

Fig. 1.



Elevation Fig. 2.

Rollers for square bars.

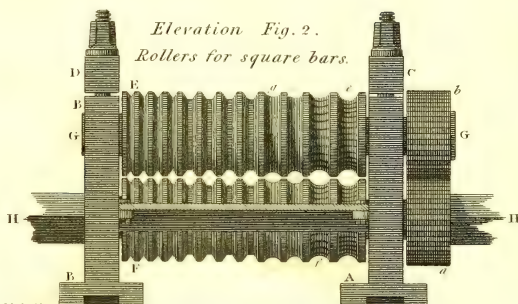
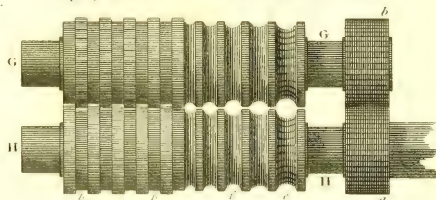
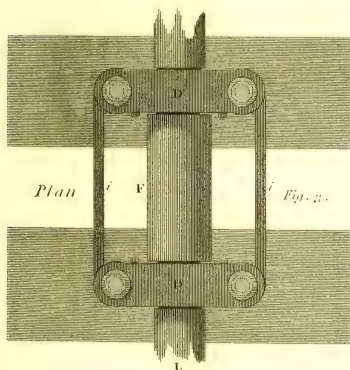


Fig. 4. Rollers for flat bars.



Plan

Fig. 3.



Scale of Feet.



Plate Roller.

Fig. 5.

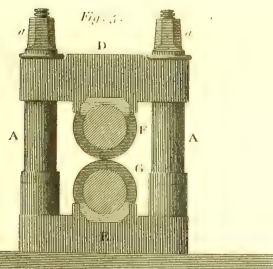
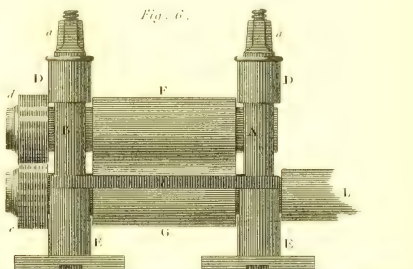
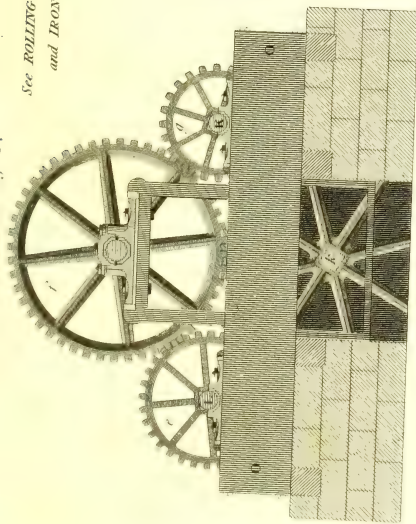


Fig. 6.



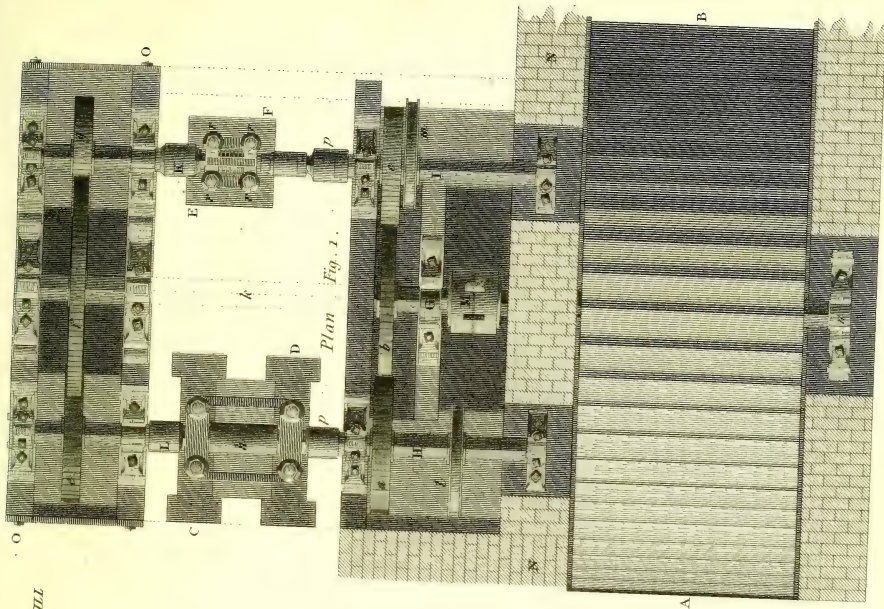
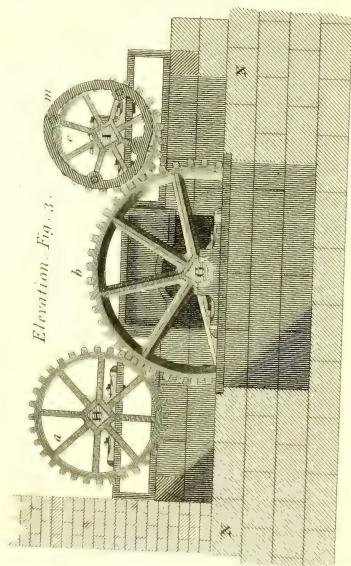


Elevation Fig. 2.



Scale of Feet.
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

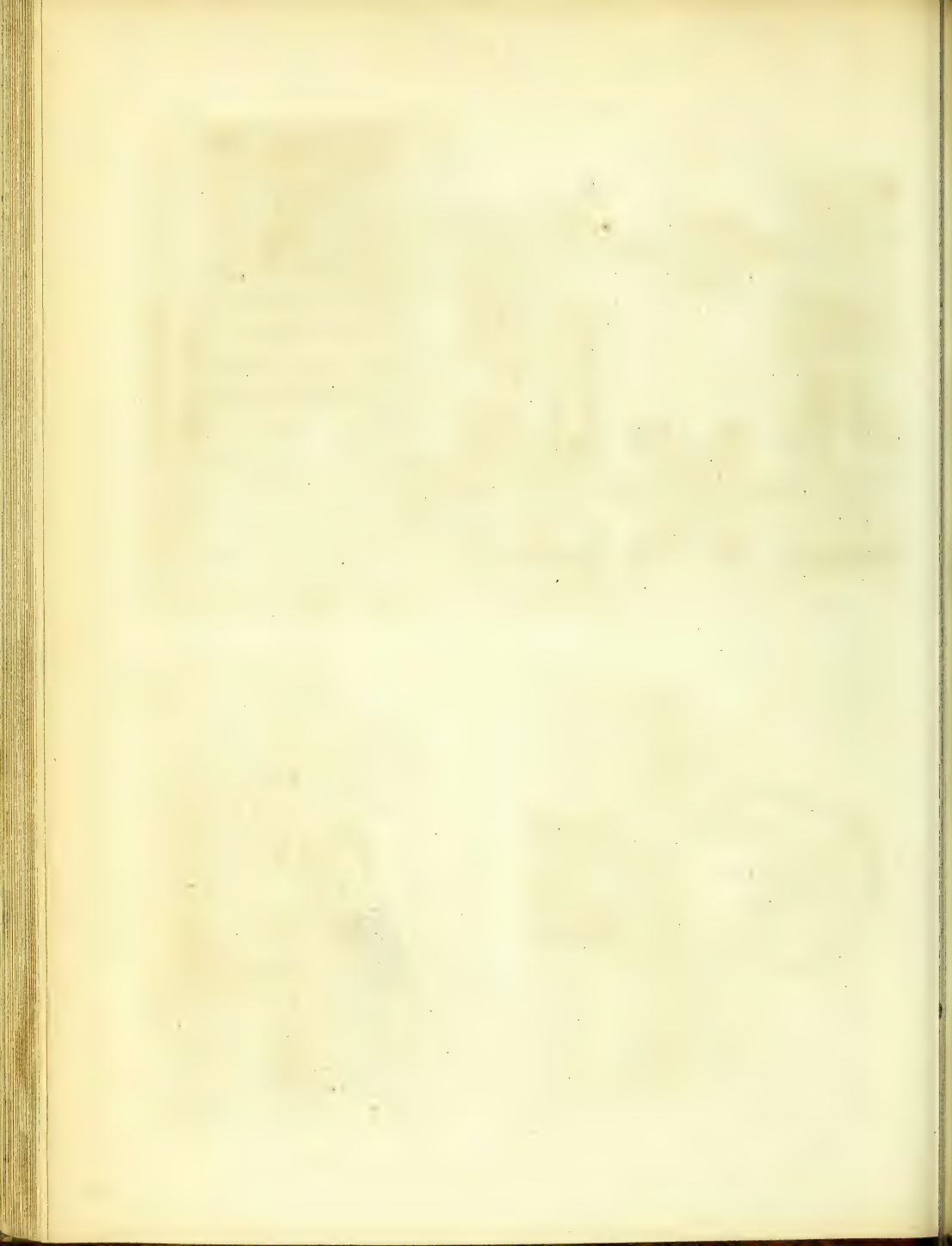
Elevation Fig. 3.



J. E. Fox, delin.

Published as the Act directed, 1831, by Longman, Hurst, Rose, Orme & Brown, Paternoster Row.

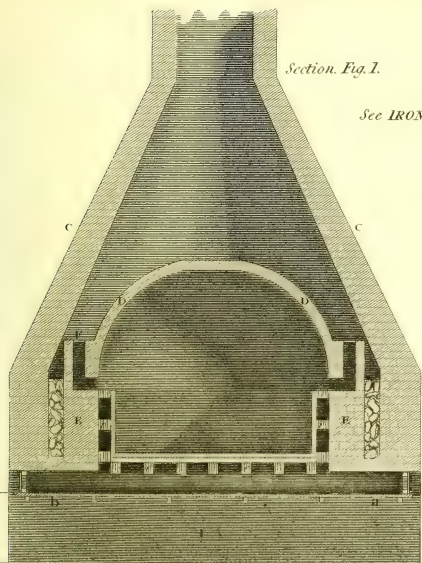
Engraved by W. Lowrey.



STEEL CONVERTING FURNACE.

Section. Fig. 1.

See IRON and STEEL.



Section. Fig. 2.

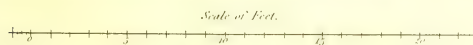
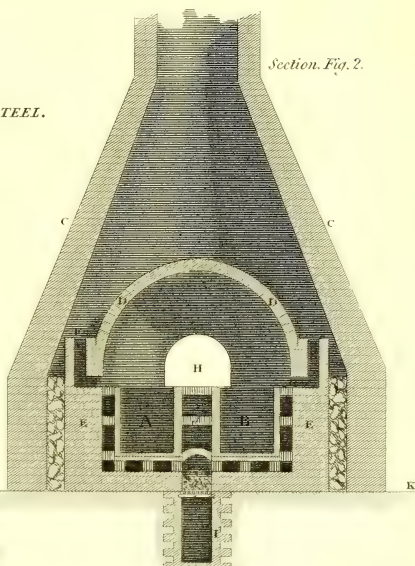


Fig. 4.

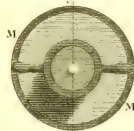


Fig. 7.

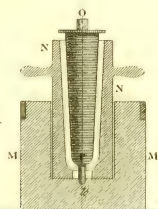


Fig. 6.



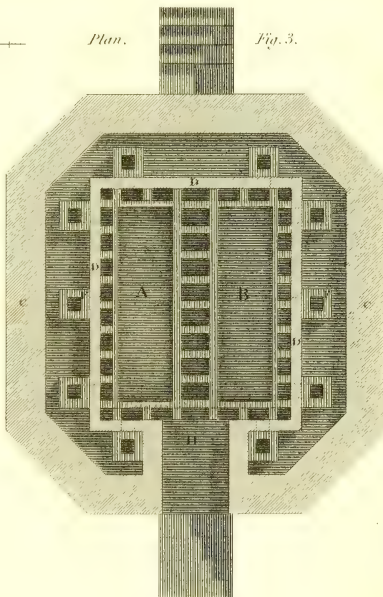
Mould for making crucibles.

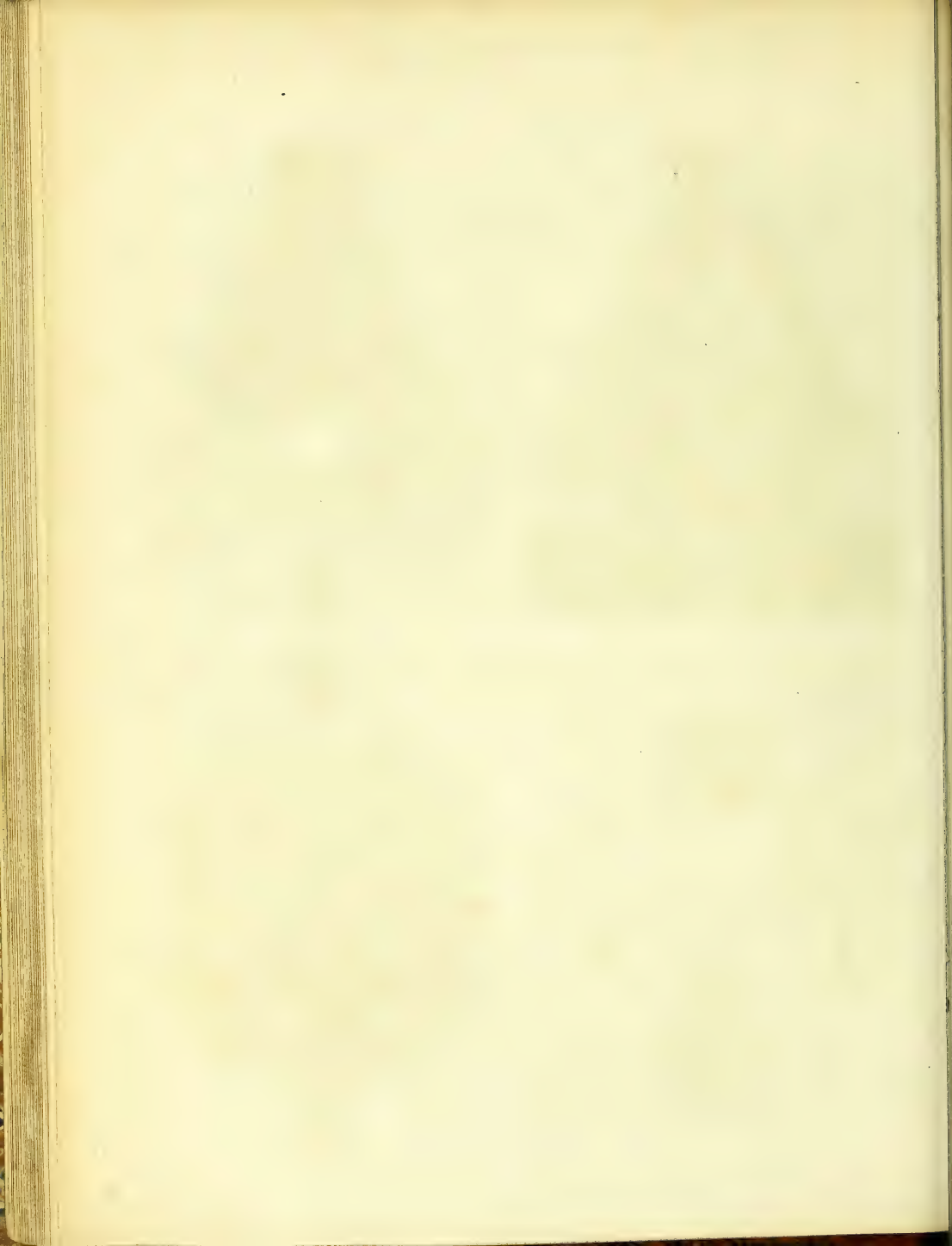
Fig. 5.



Plan.

Fig. 3.



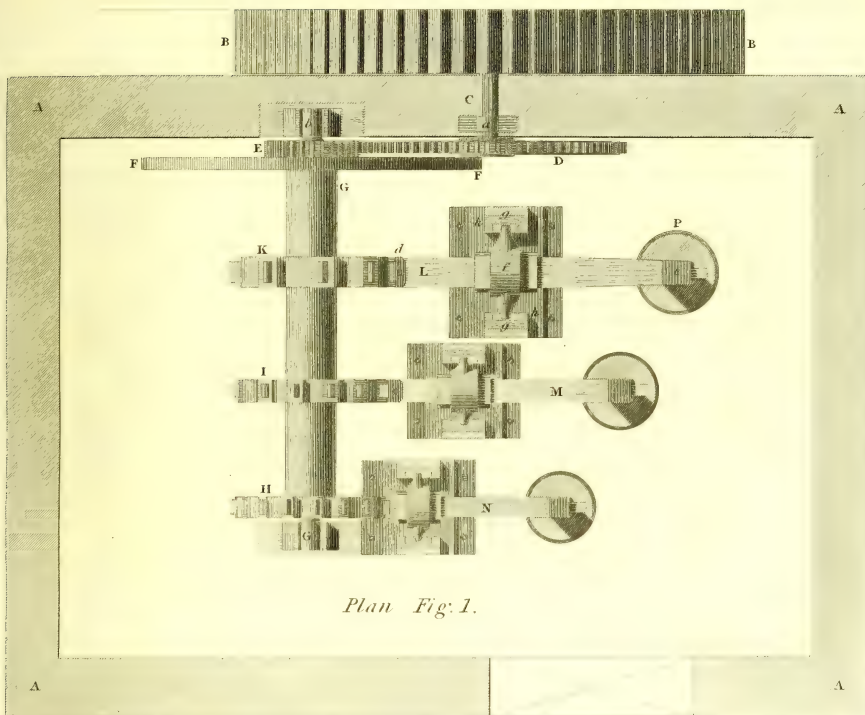


IRON MANUFACTURE.

MILL FOR TILTING STEEL,

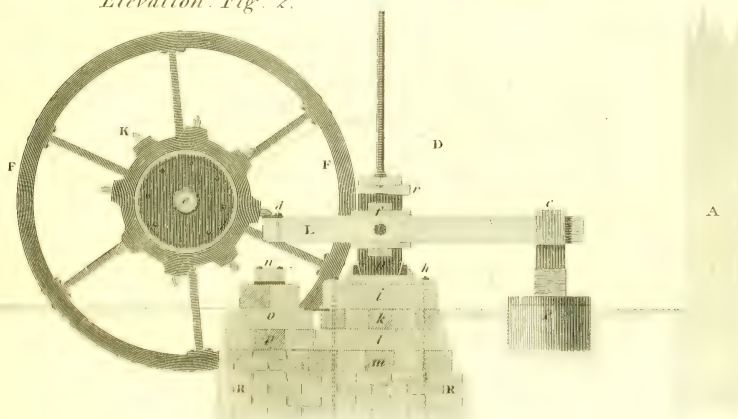
by M^r. Smeaton.

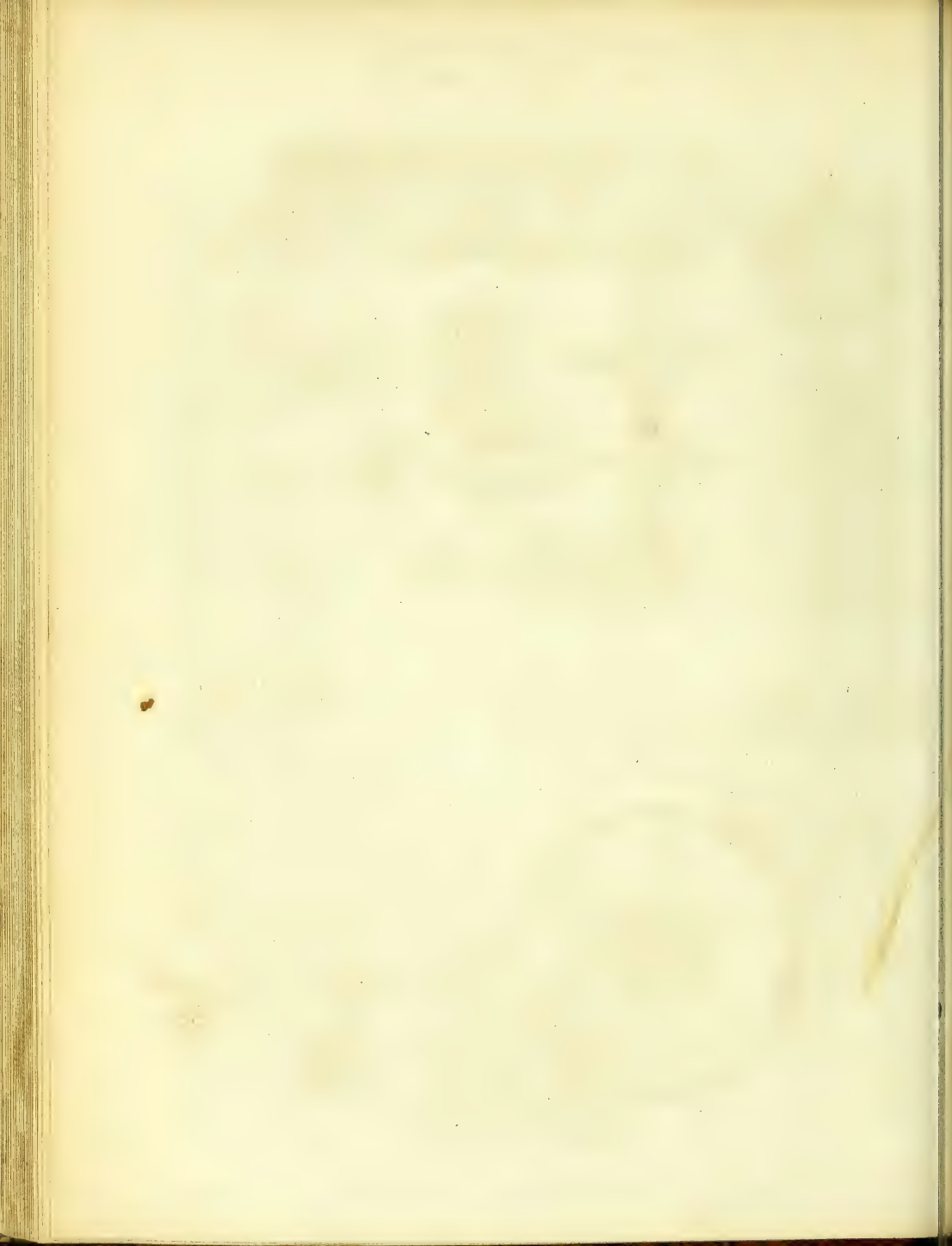
PLATE VIII.



Plan Fig. 1.

Elevation Fig. 2.





Argand's.

Fig. 1.

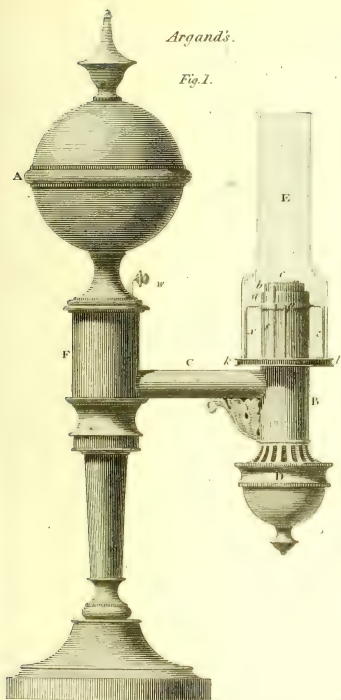
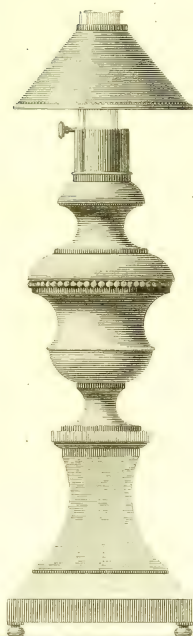


Fig. 6.



M. Kier's.

Fig. 5.

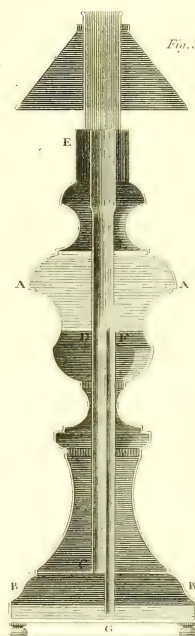


Fig. 3.

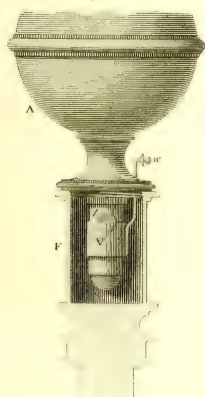


Fig. 2.

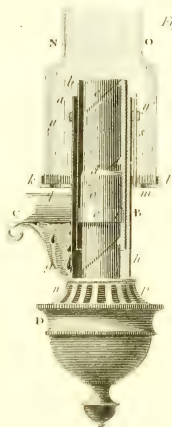


Fig. 4.
Lamp Cotton.

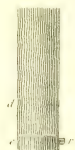
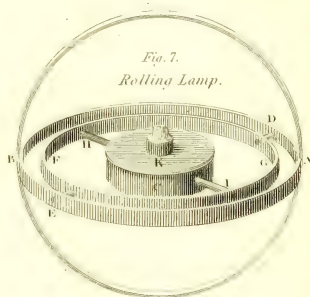
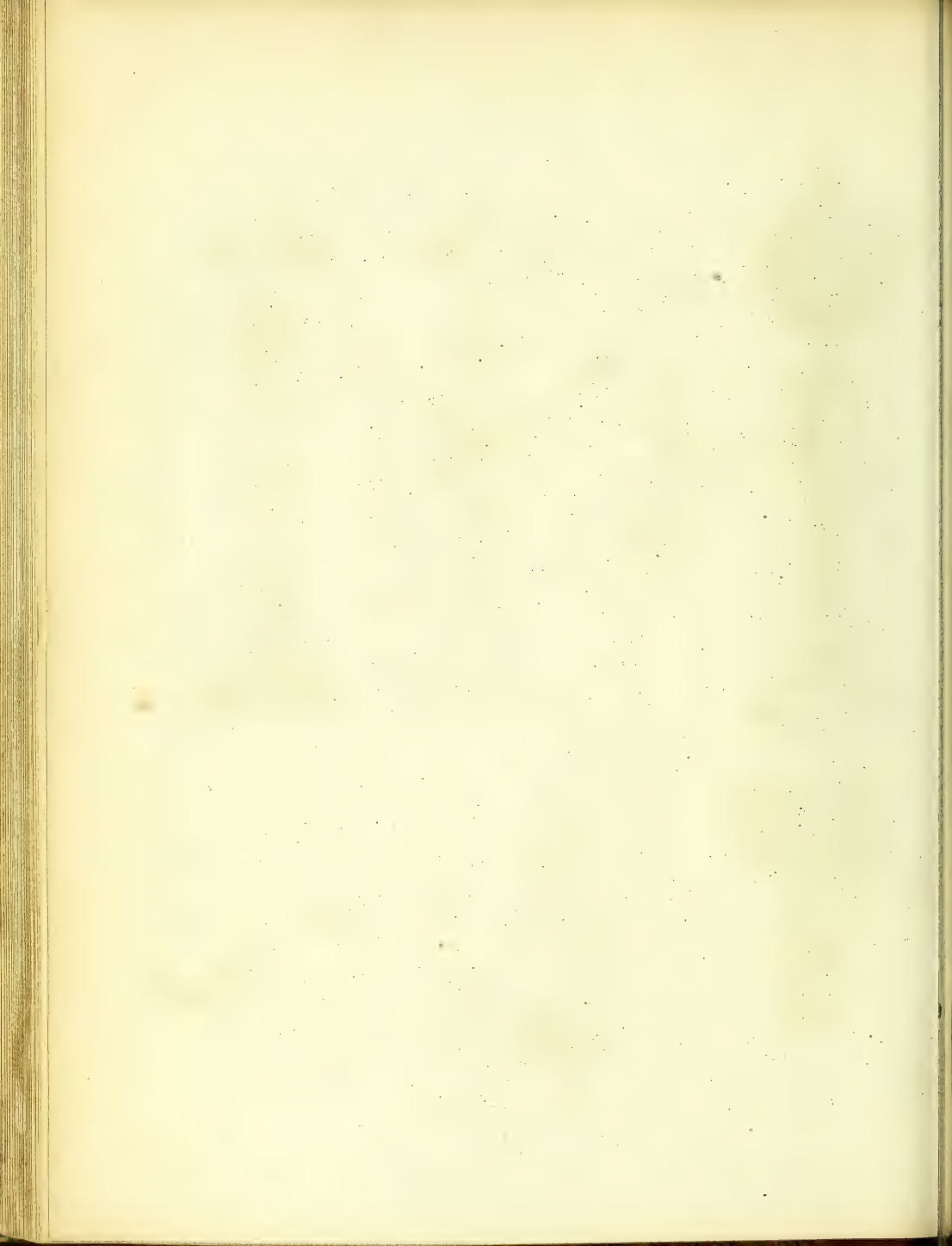
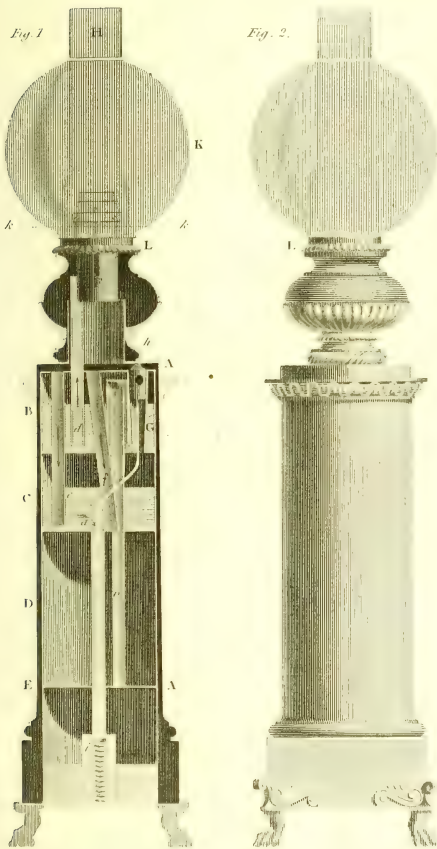


Fig. 7.
Rolling Lamp.

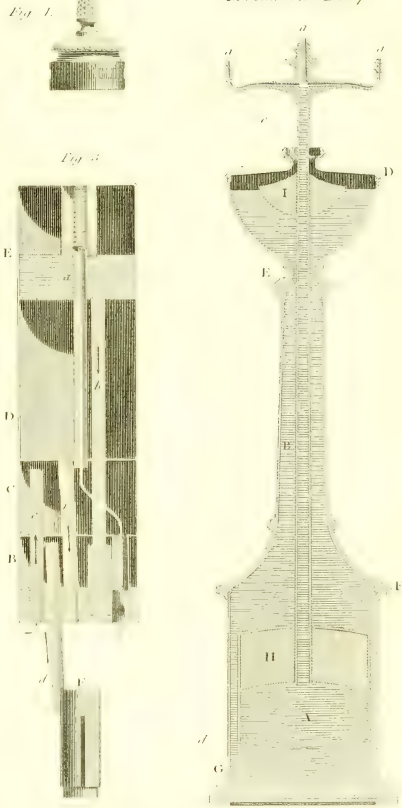




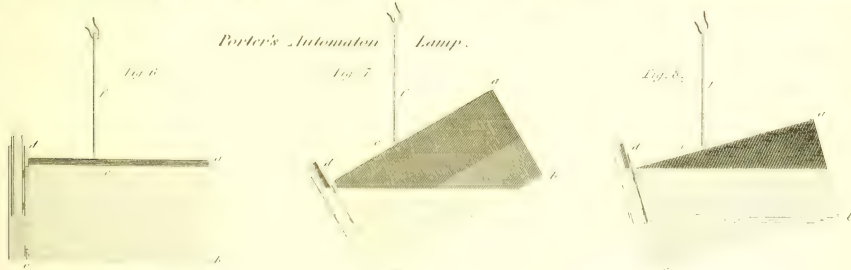
Hydro-Pneumatic Lamp, by R. W. King.

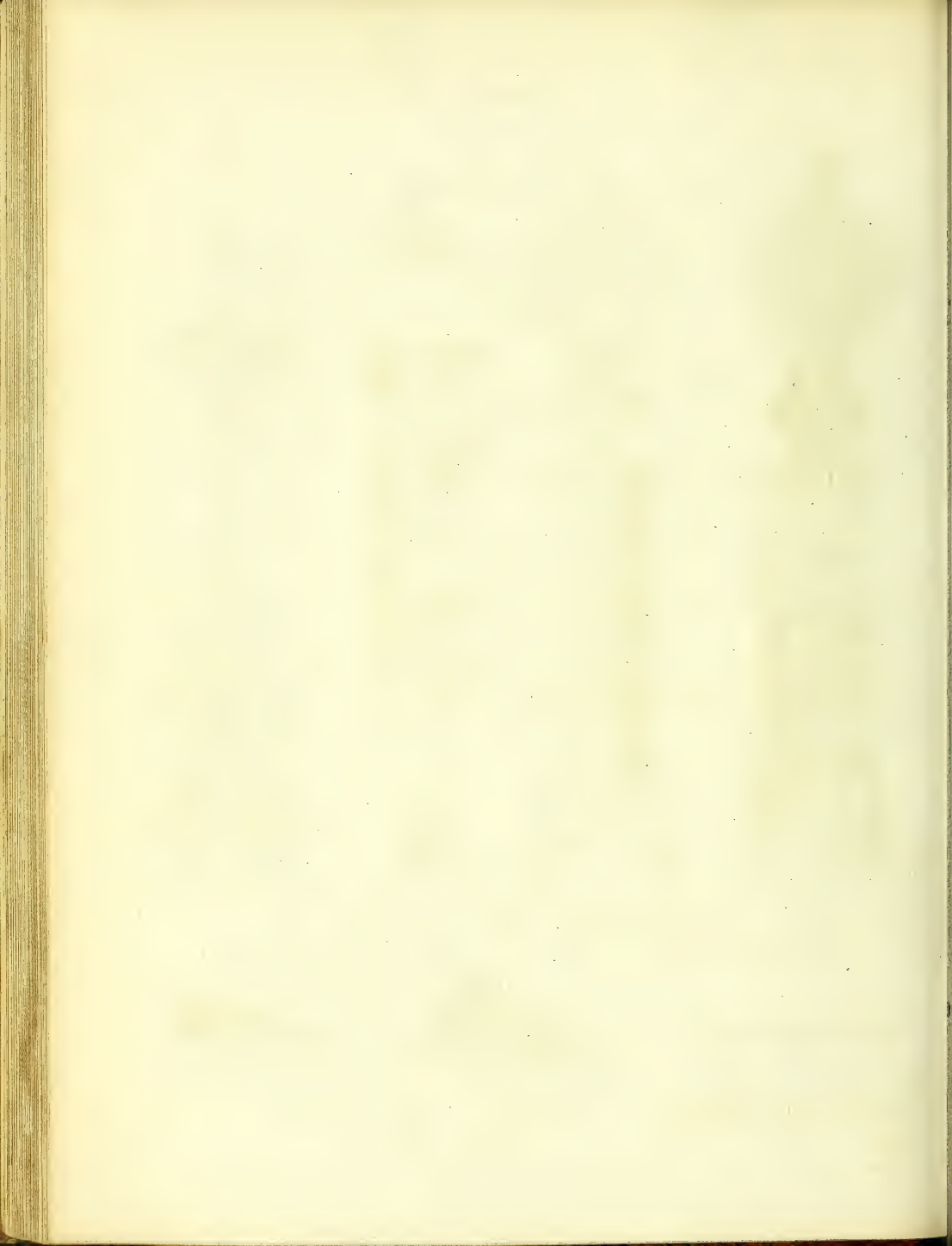


*Fig. 3.
M. Barton's Lamp.*



Porter's Automaton Lamp.





L A T H E .

by M^r H. Maudslay.

Fig. 1.

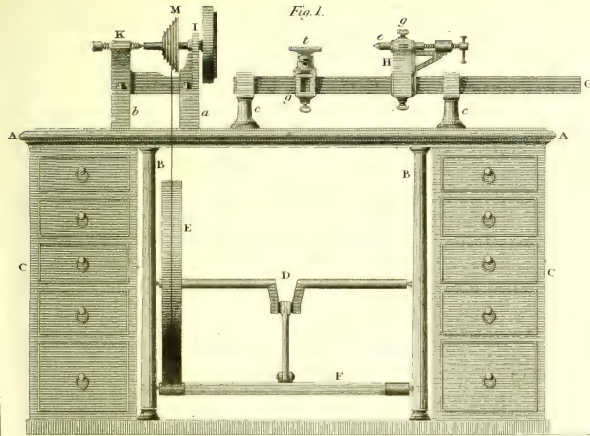


Fig. 2.

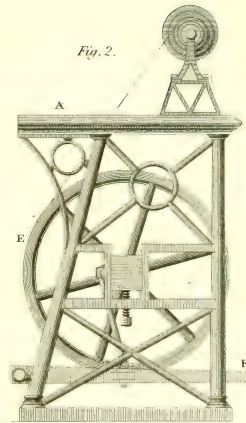


Fig. 3.

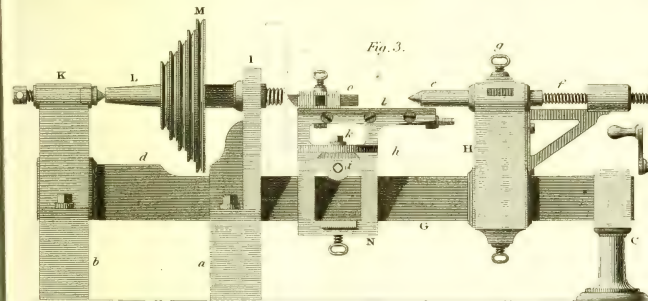


Fig. 4.

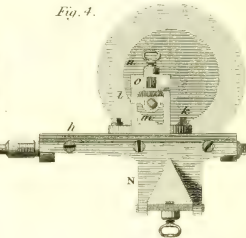


Fig. 5.

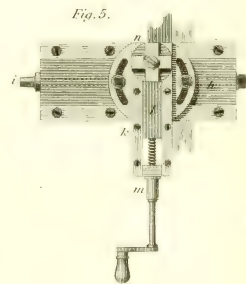


Fig. 6.

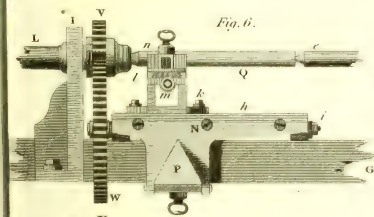


Fig. 7.

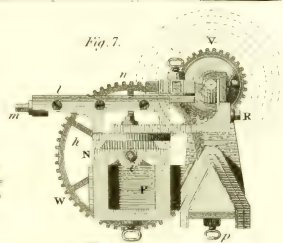


Fig. 9.

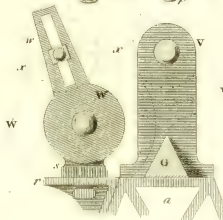


Fig. 8.

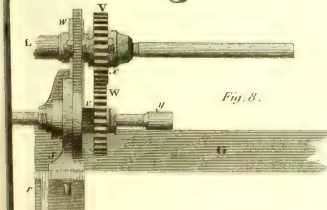
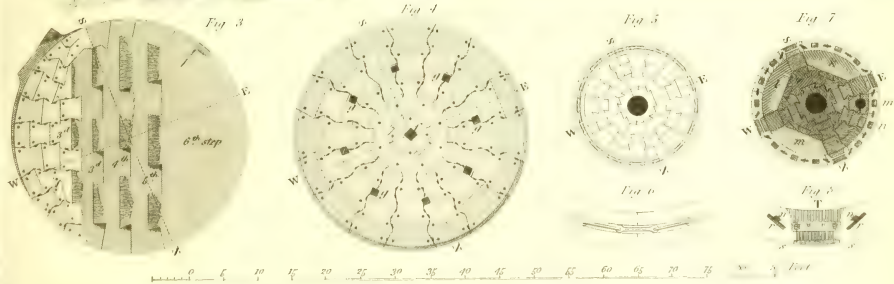
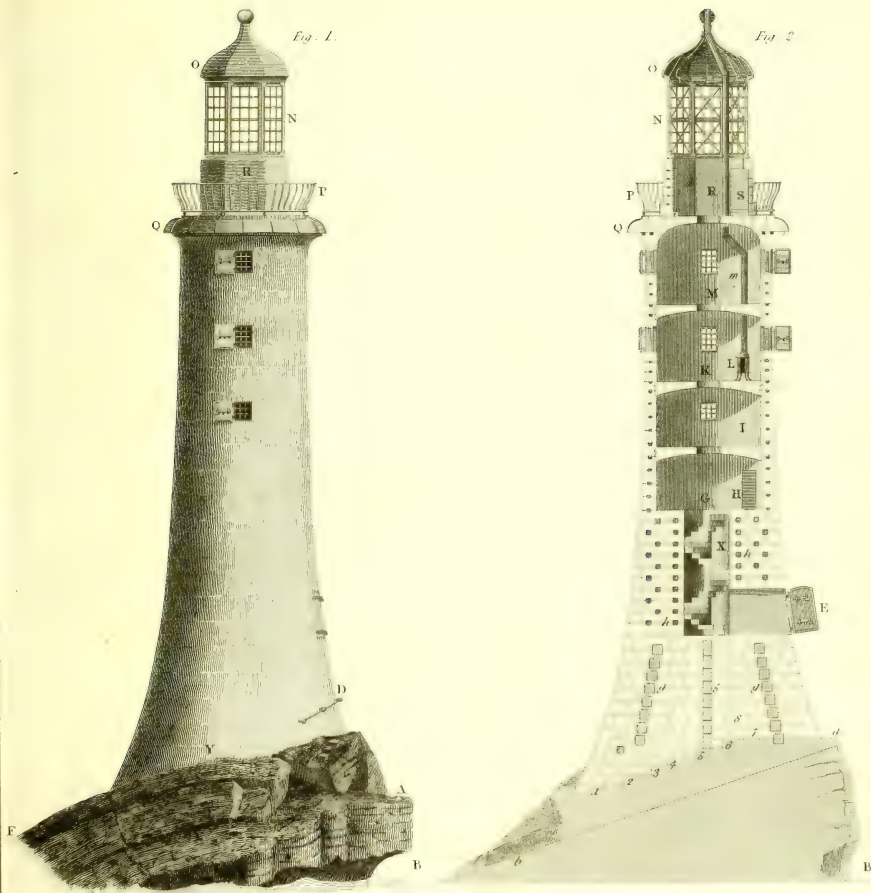


Fig. 10.

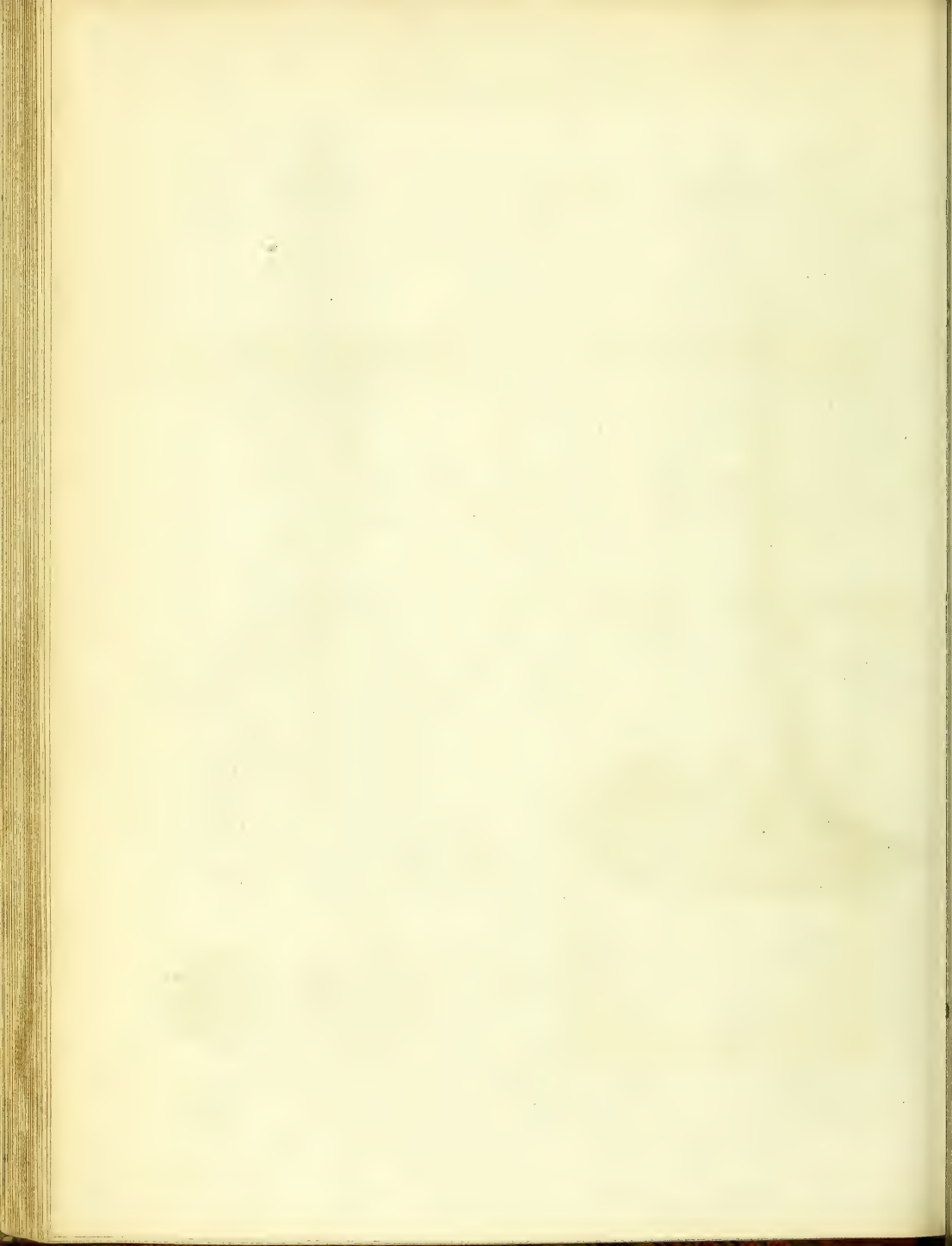


LIGHT HOUSE.

LIGHT HOUSE on the Eddystone Rock.



0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100



MAGNETISM.

COMPASS.

PLATE I.

Fig. 1.



Fig. 2.



Fig. 3.



Fig. 5.



Fig. 4.



Fig. 8.



Fig. 9.

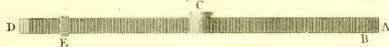


Fig. 7.



Fig. 6.



Fig. 11.

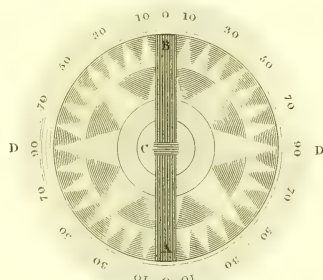


Fig. 10.

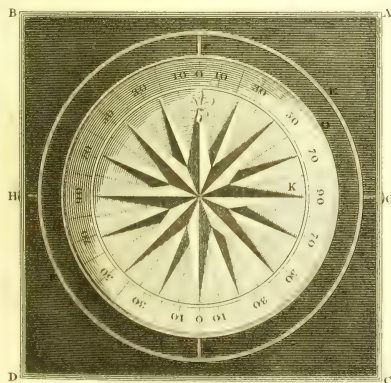
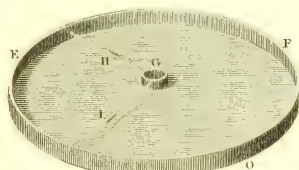
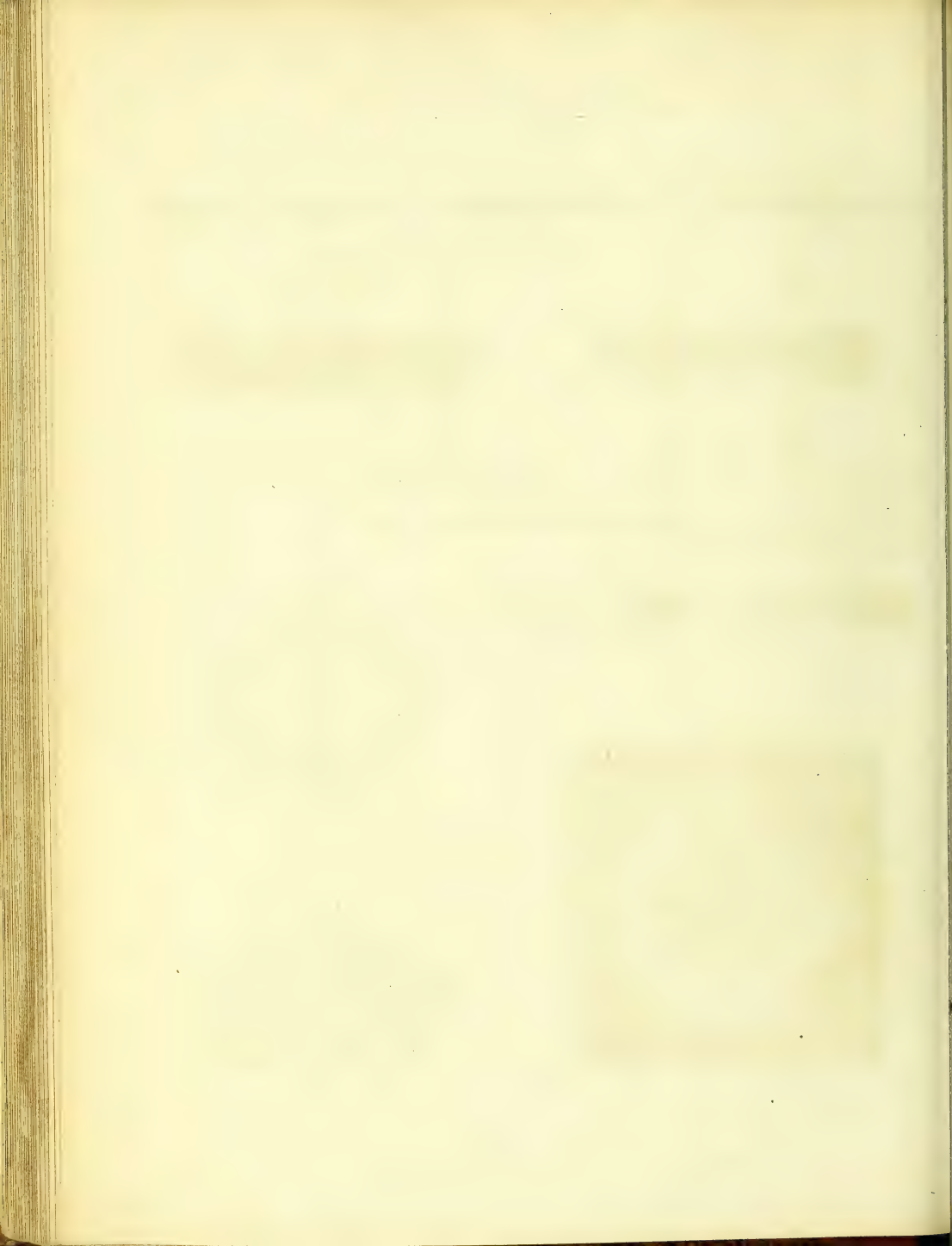


Fig. 12.





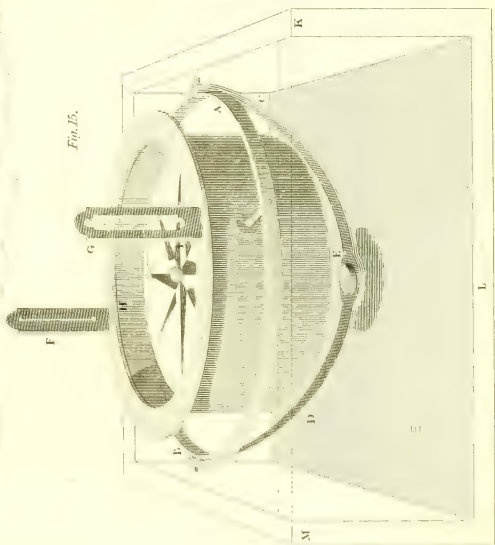
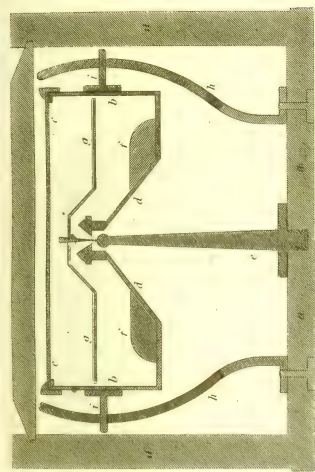
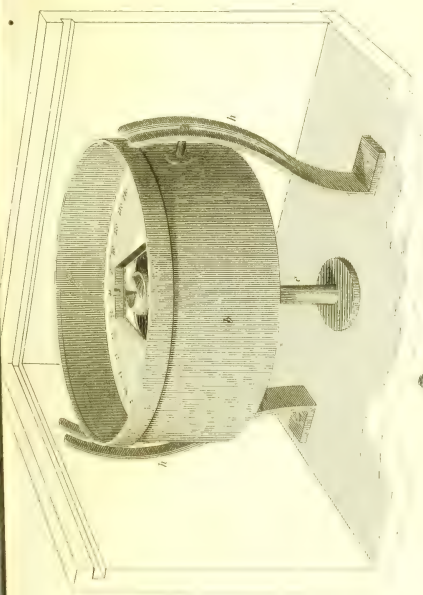


Fig. 15.

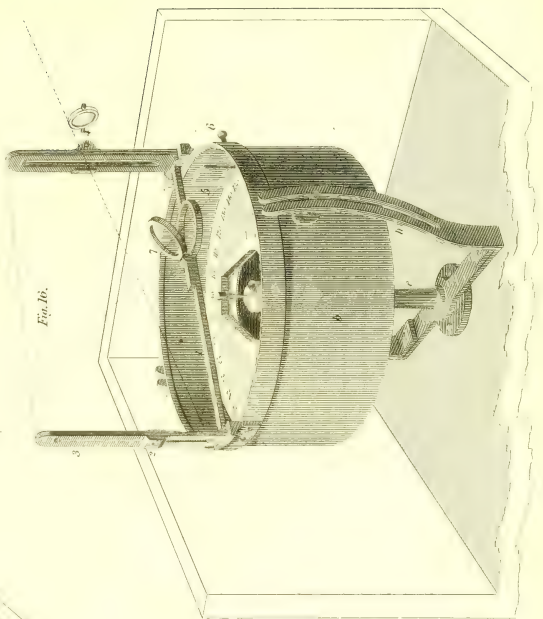


Fig. 10.

Fig. 17.

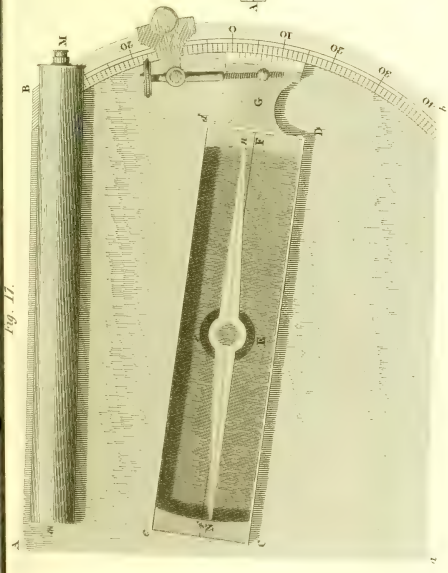


Fig. 19.

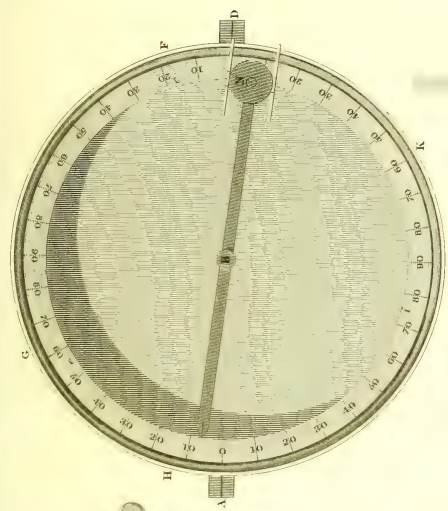


Fig. 20.

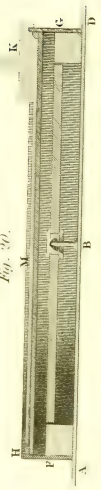


Fig. 18.

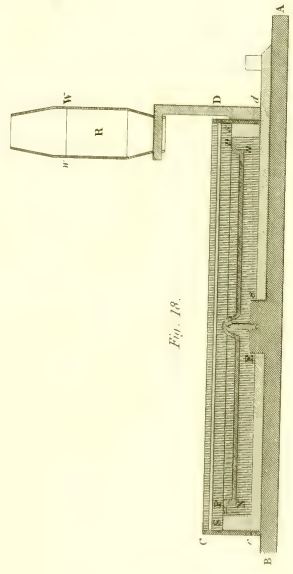


Fig. 22.

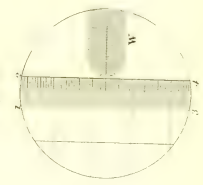
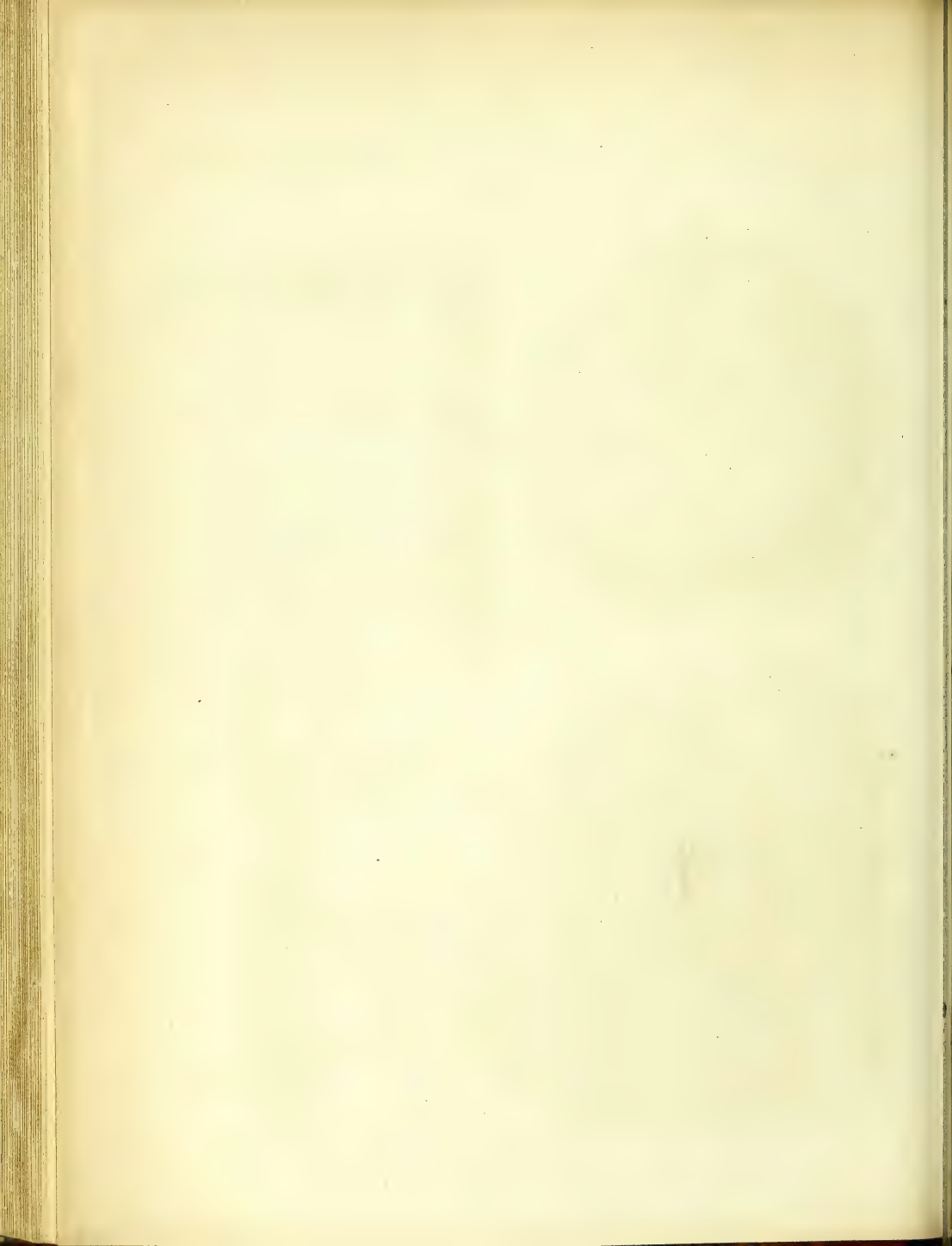


Fig. 21.





DIPPING.

Fig. 22.

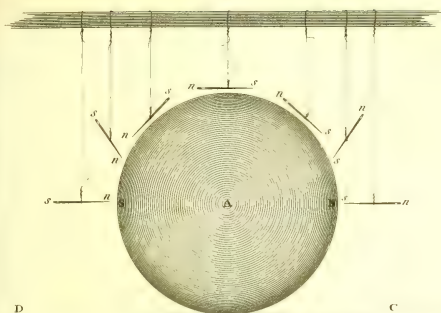
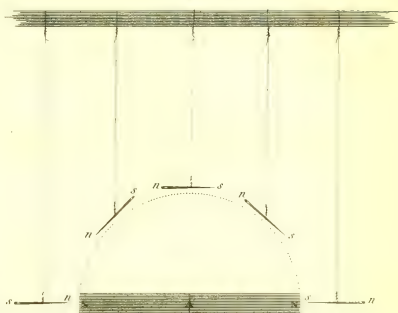


Fig. 23.



for Fig. 27, see the next Plate

Fig. 29.

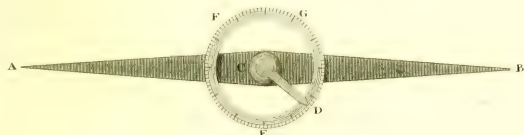


Fig. 24.

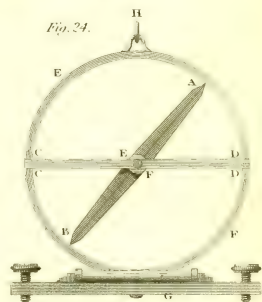


Fig. 30.
Dipping Needle by Dr Lorimer

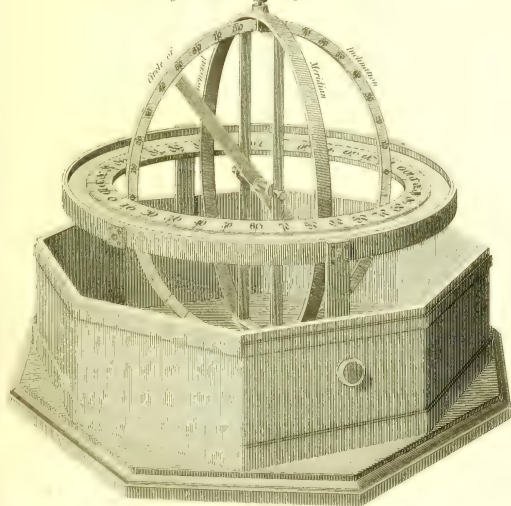


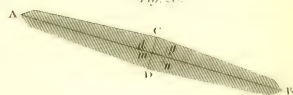
Fig. 25.

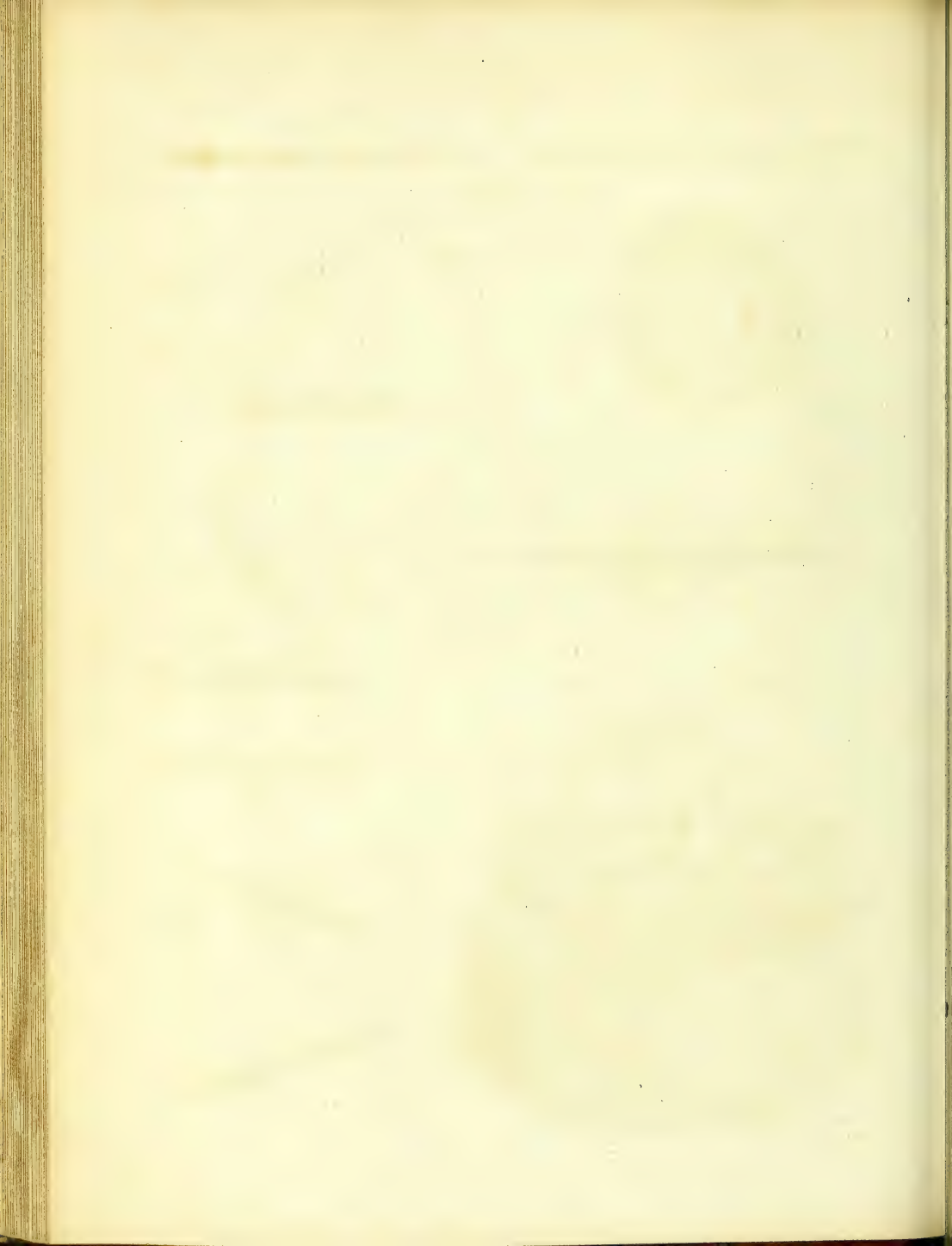


Fig. 26.



Fig. 28.

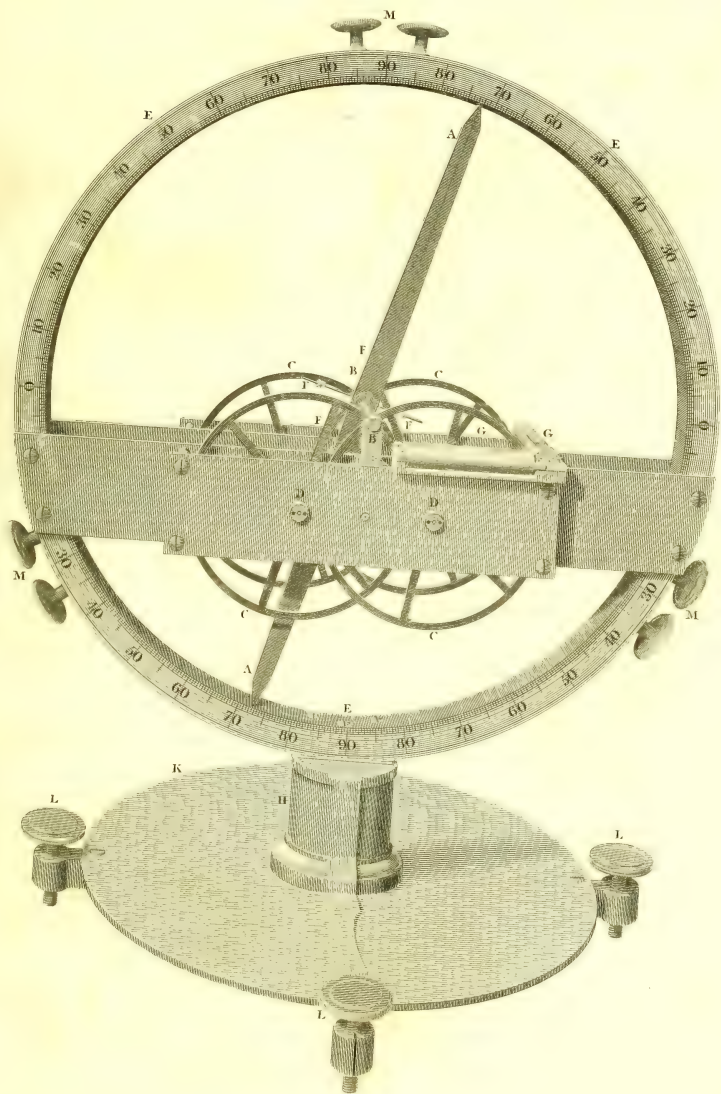




MAGNETISM.

Dipping Needle made by M^r. Nairne for the Board of Longitude, on the Plan of the Rev.^d M^r. Mitchel.

PLATE V.



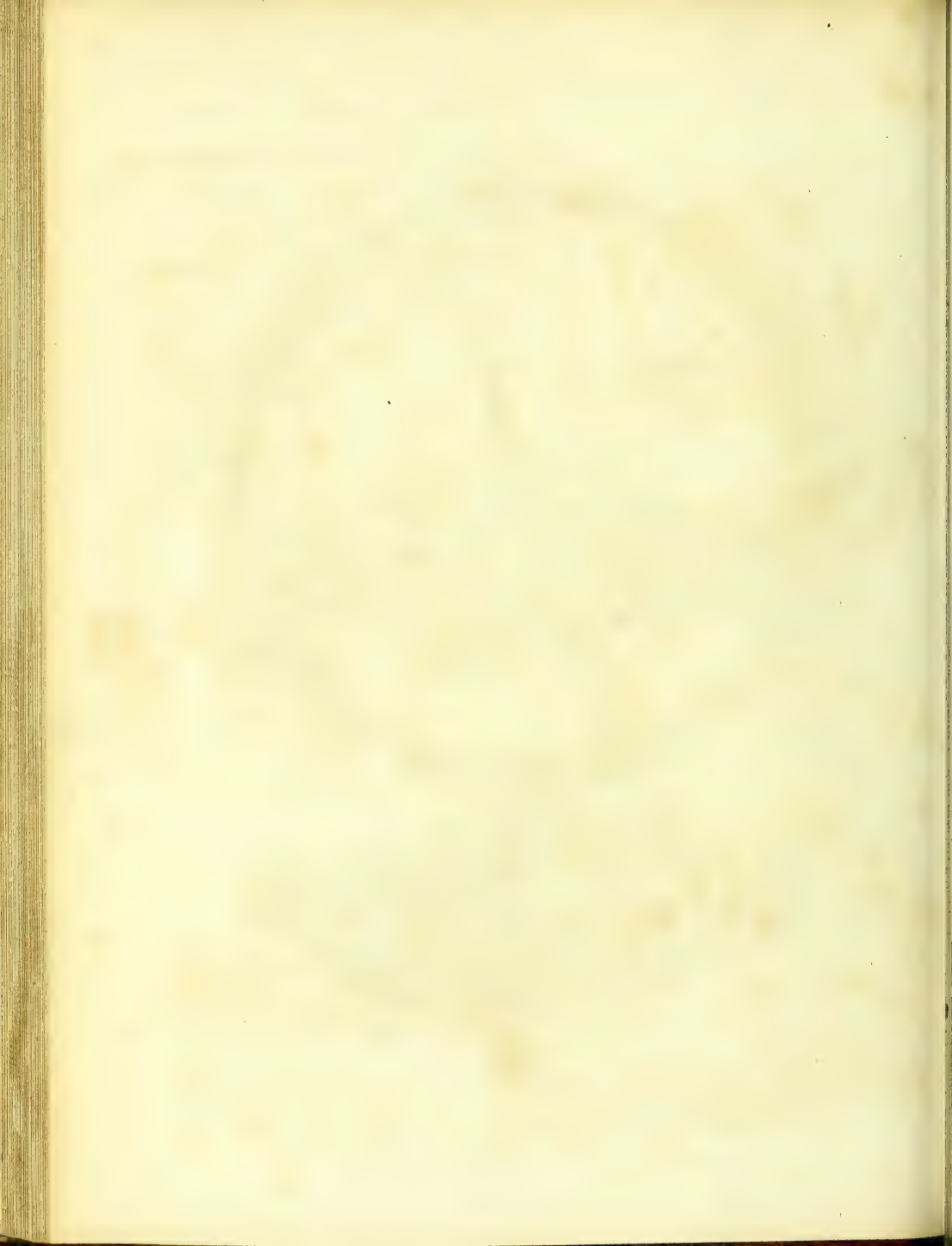


PLATE VII.

Fig. 1.

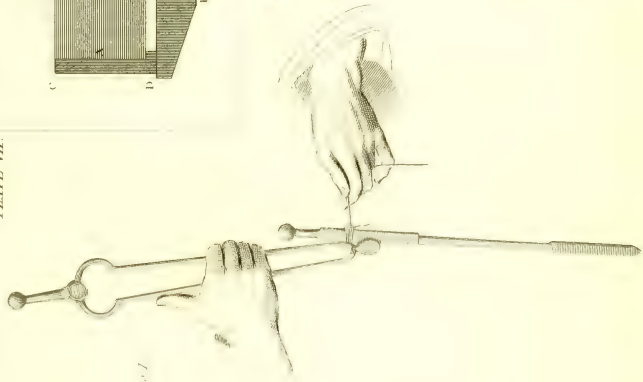


Fig. 2.

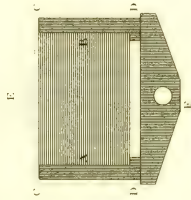


Fig. 3.

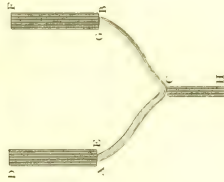


Fig. 4.

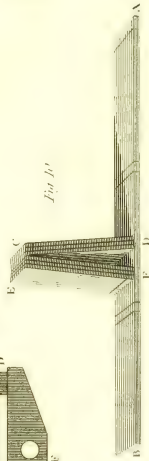


Fig. 5.



Fig. 6.

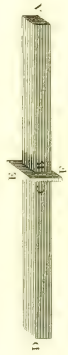


Fig. 7.



Fig. 8.

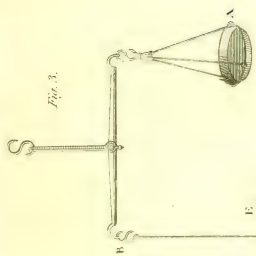


Fig. 9.

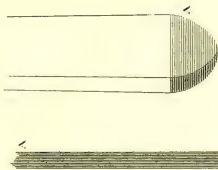


Fig. 10.

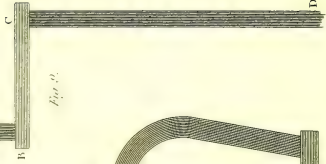
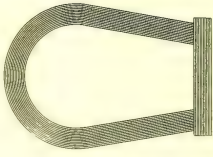


Fig. 11.





MAGNET.

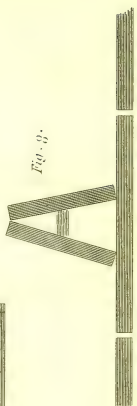
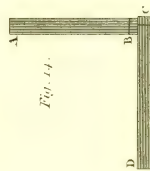
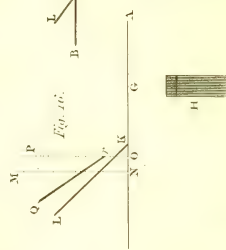
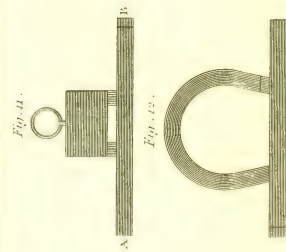
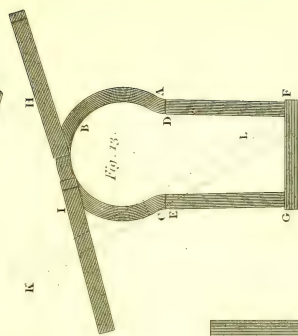
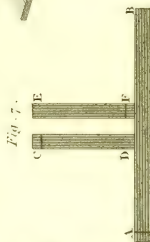
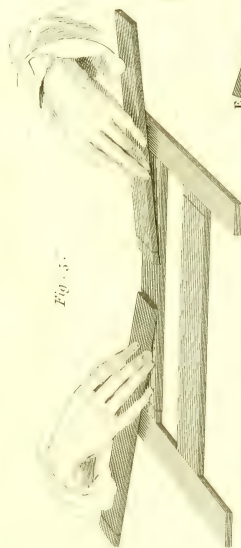
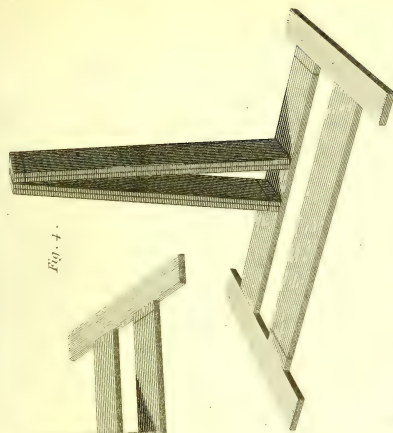
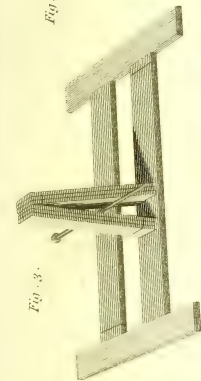
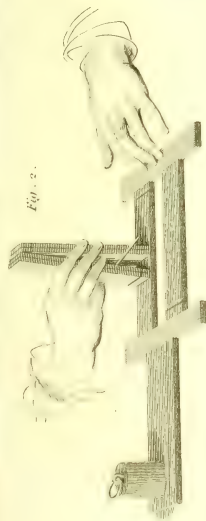


Fig. 2.
Incertain.

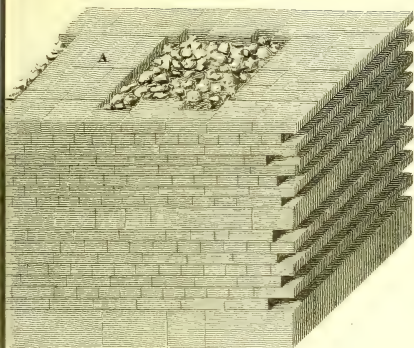


Fig. 1.
Reticulated.

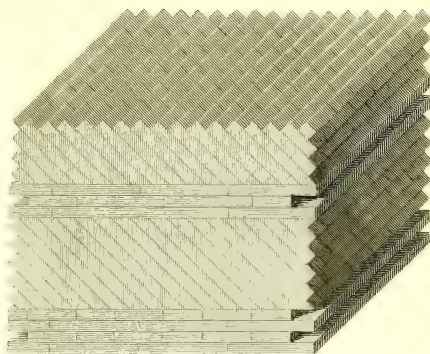


Fig. 4.
Pseudisodumum.

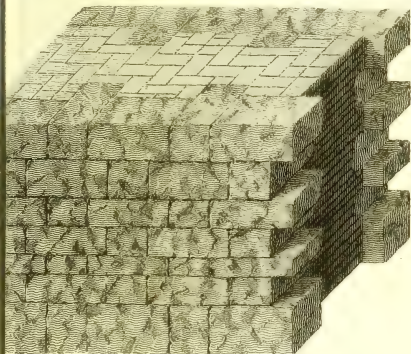


Fig. 3.
Isodumum.

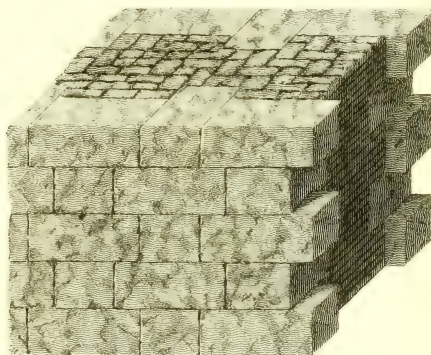


Fig. 6.
Greek Emption.

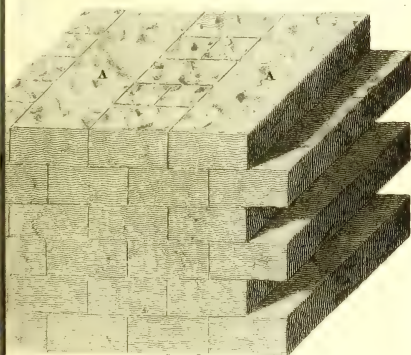
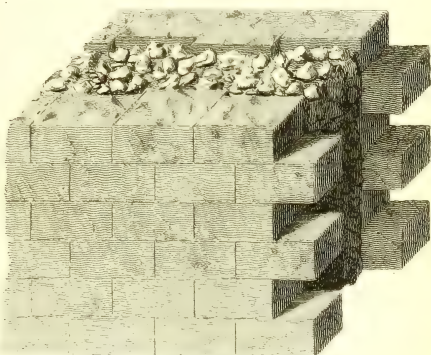


Fig. 5.
Roman Emption.



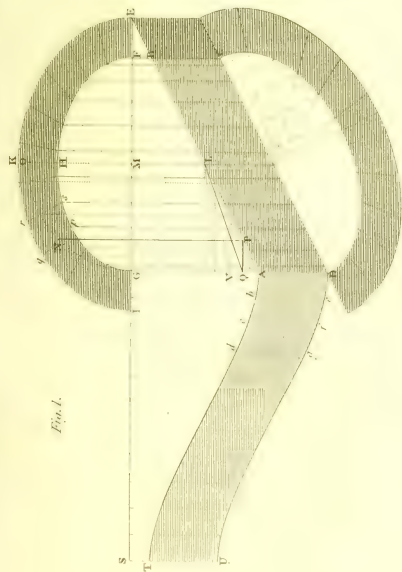


Fig. 1.

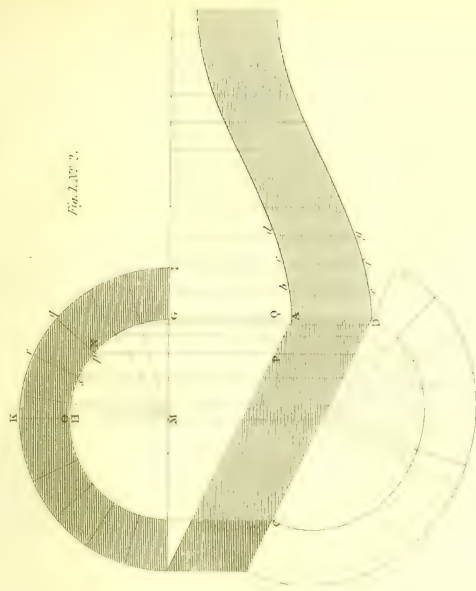


Fig. 2.

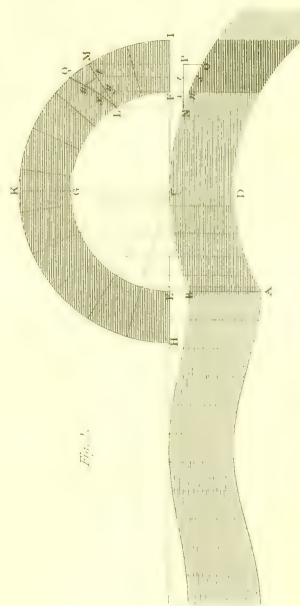
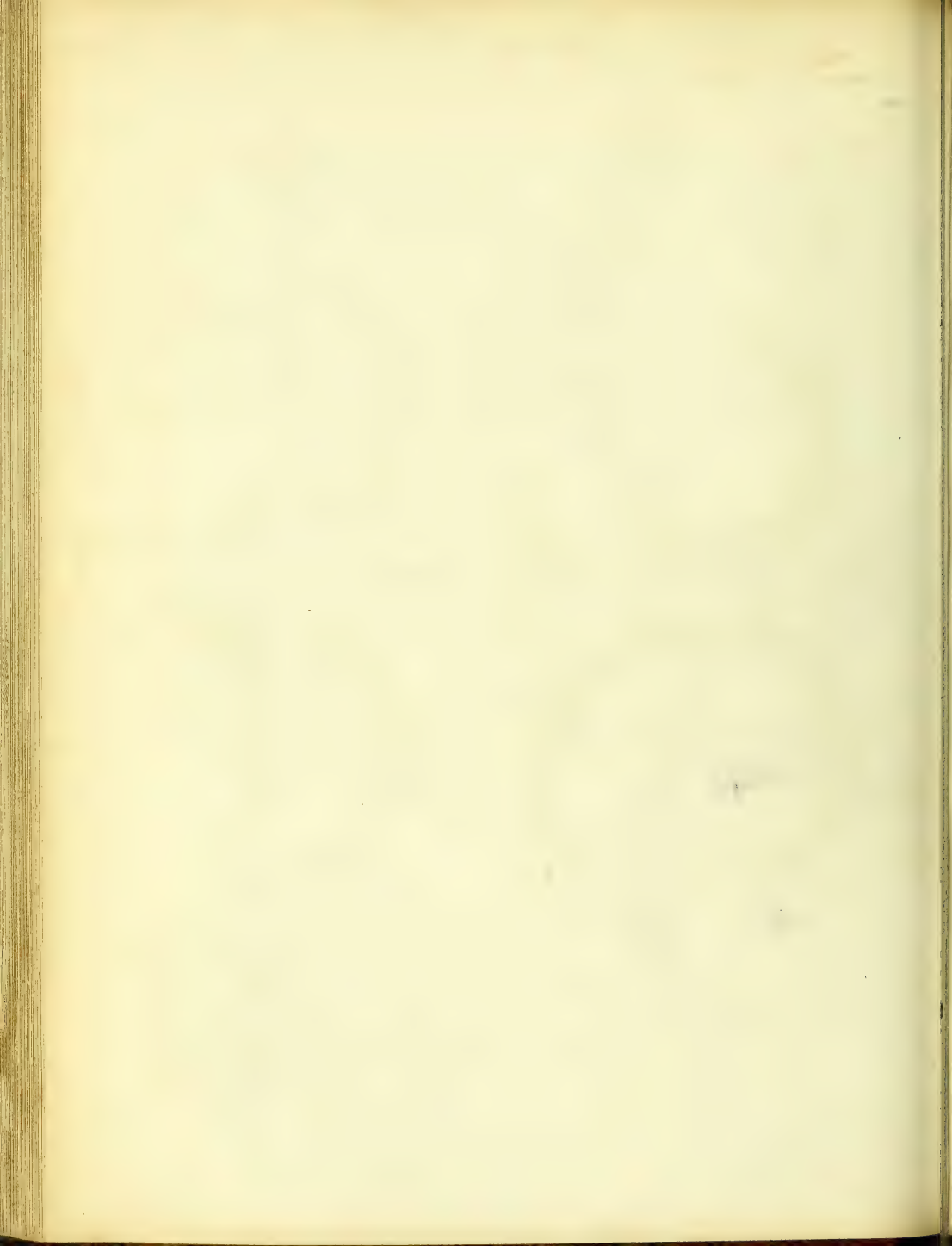


Fig. 3.



Fig. 4.



ACCELERATION.

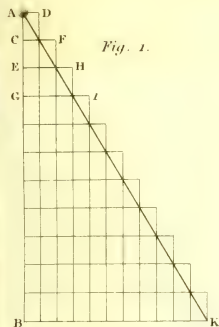


Fig. 1.

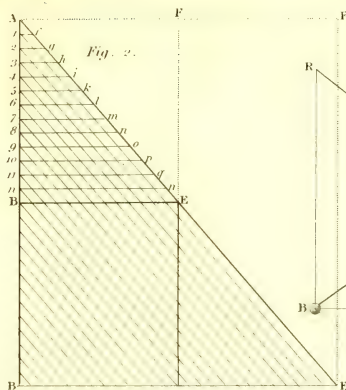


Fig. 2.

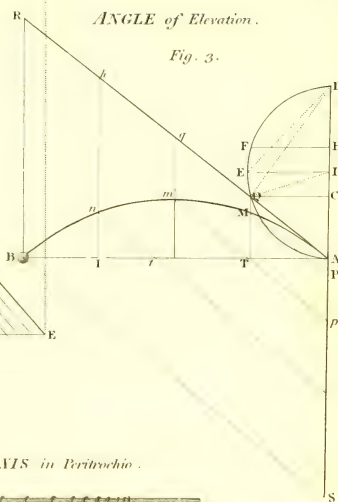


Fig. 3.

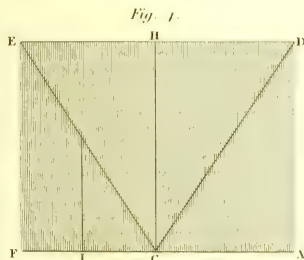


Fig. 4.

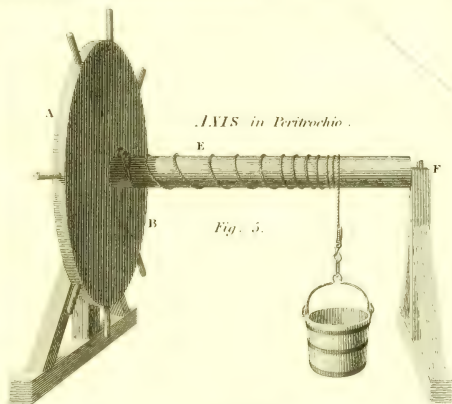


Fig. 5.

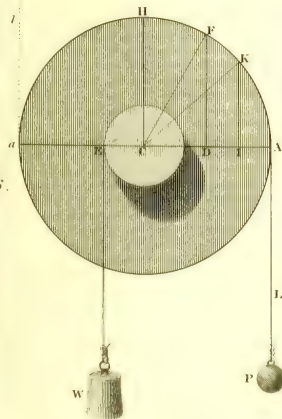


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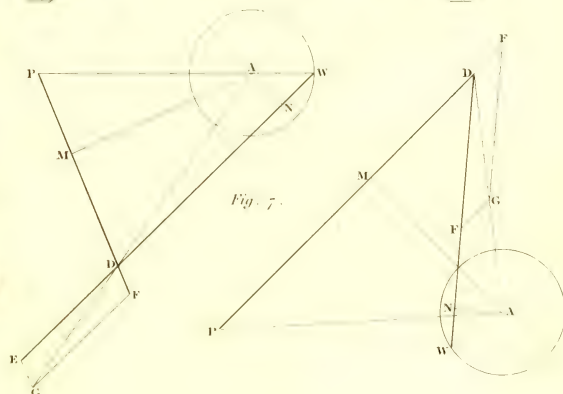
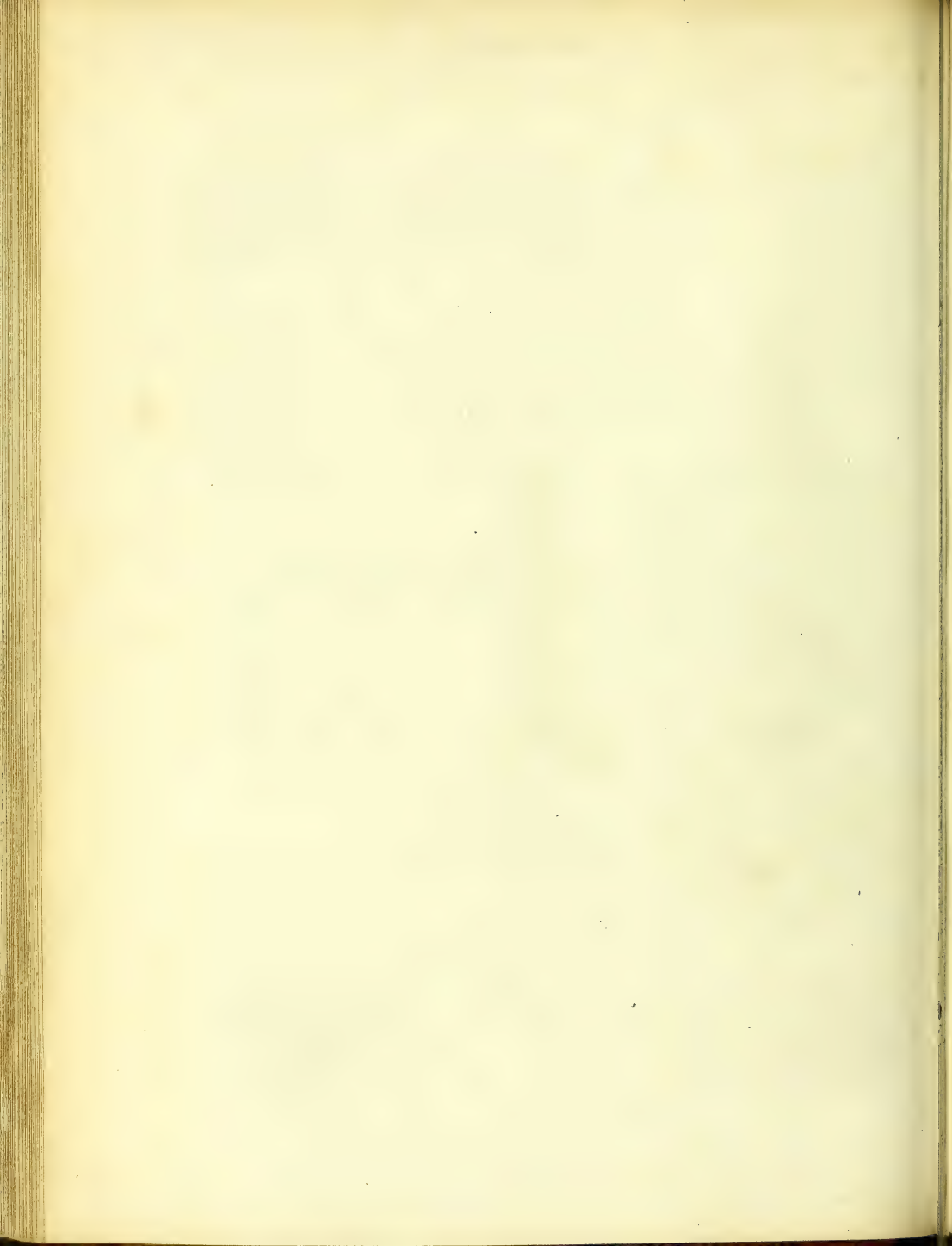


Fig. 7.



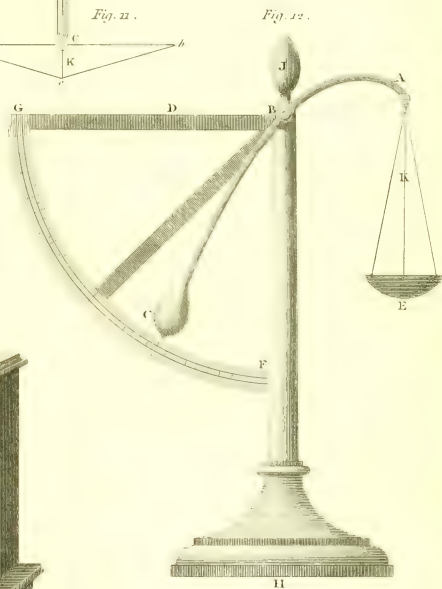
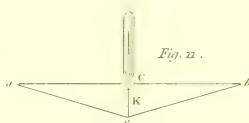
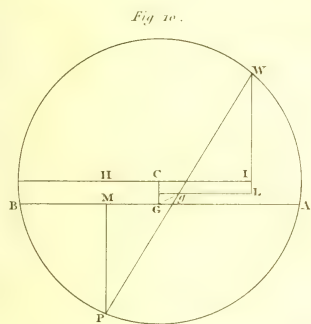
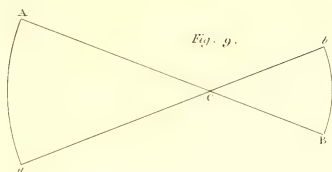
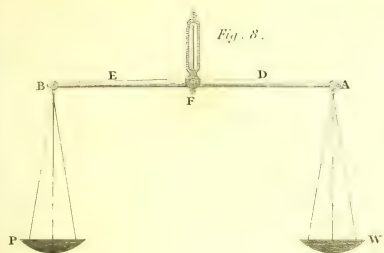
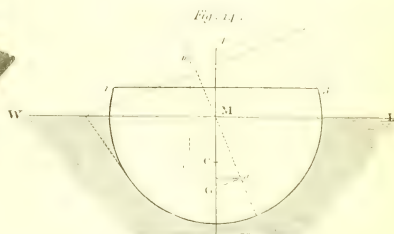
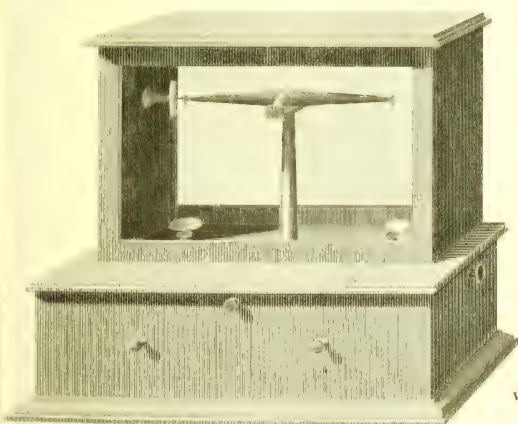
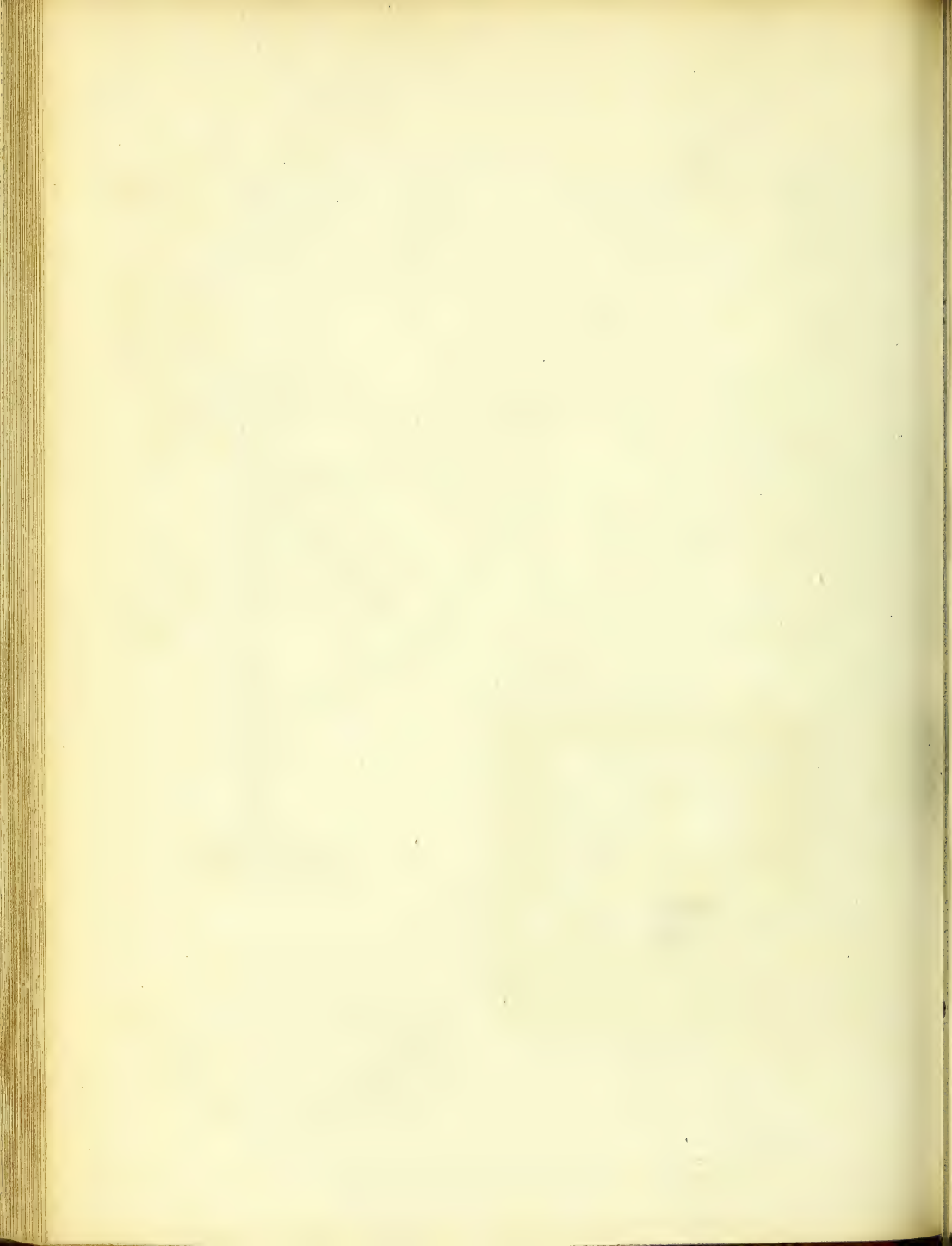
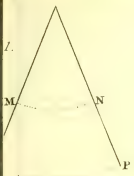


Fig. 13.

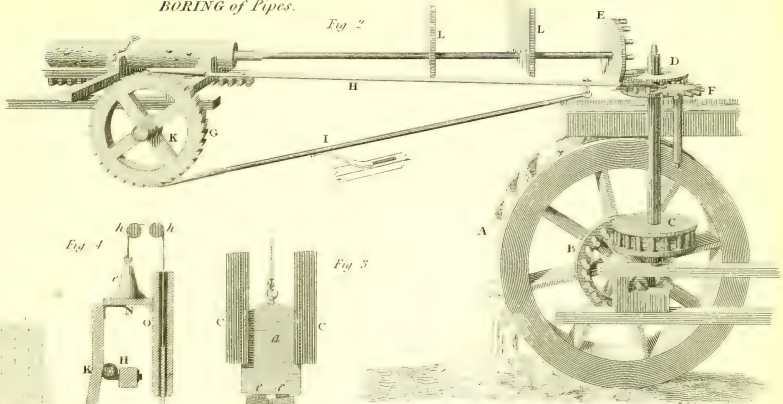




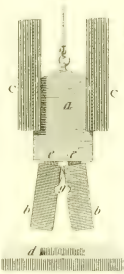
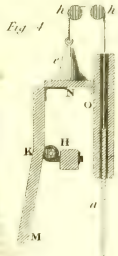
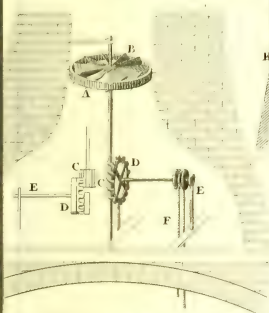
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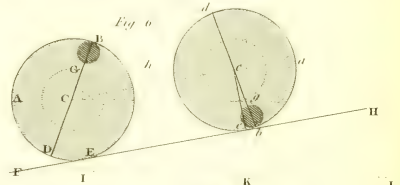
BORING of Pipes.



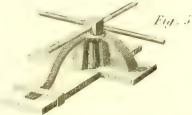
Smoke JACK



Double CYLINDER



CRAB



JACK

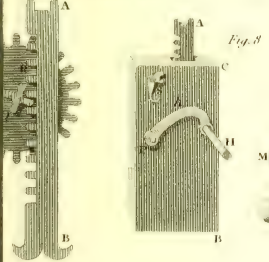


Fig. 8

LEVER

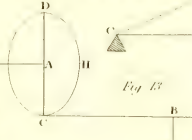


Fig. 13

Fig. 12

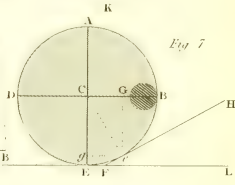


Fig. 7

PROJECTILES.

Fig. 17.

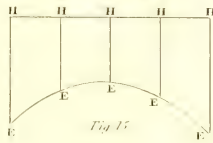
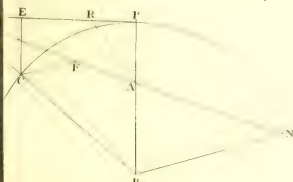


Fig. 15

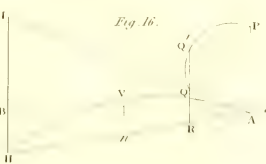


Fig. 16.

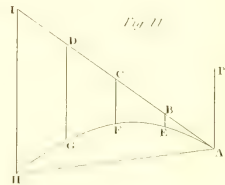
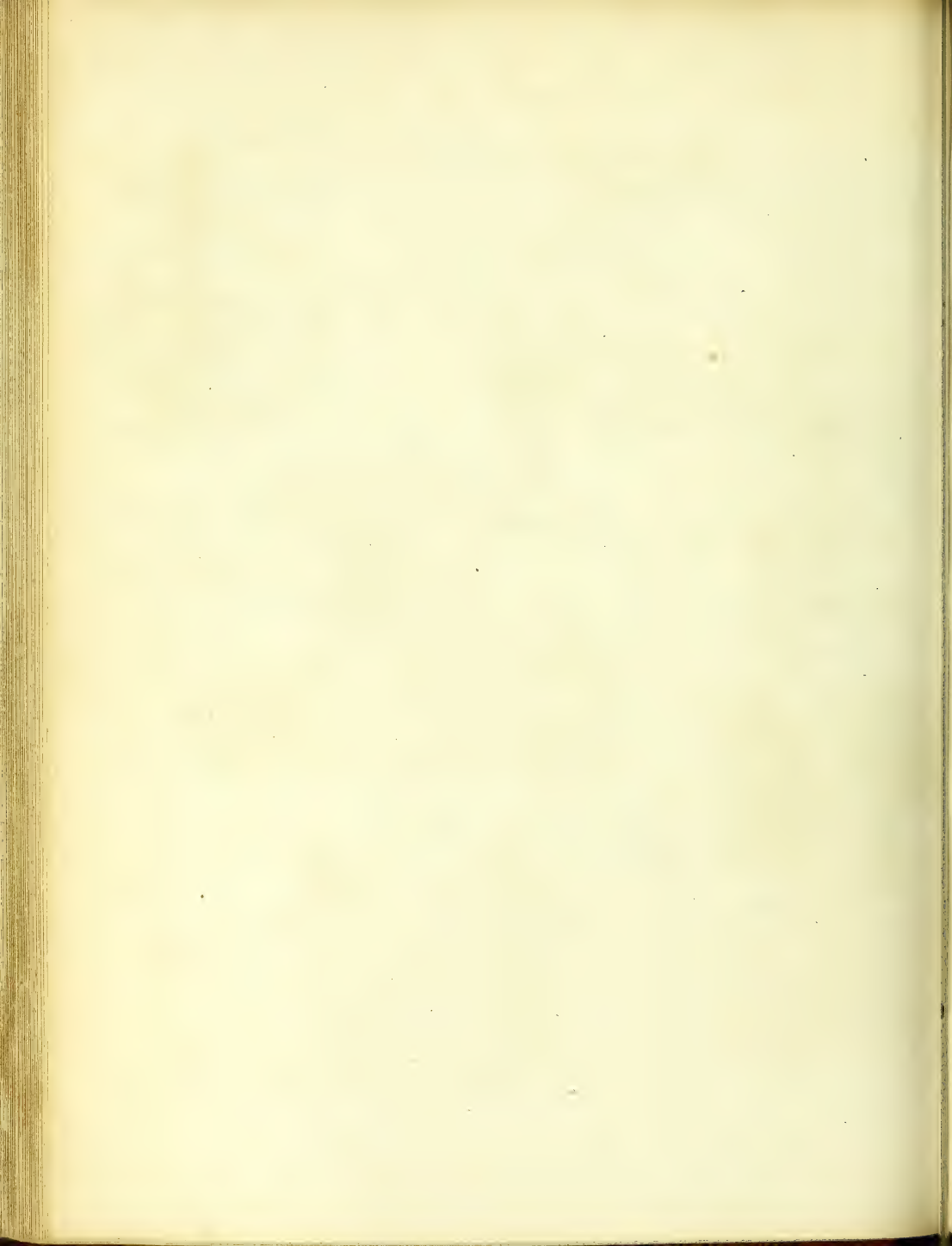
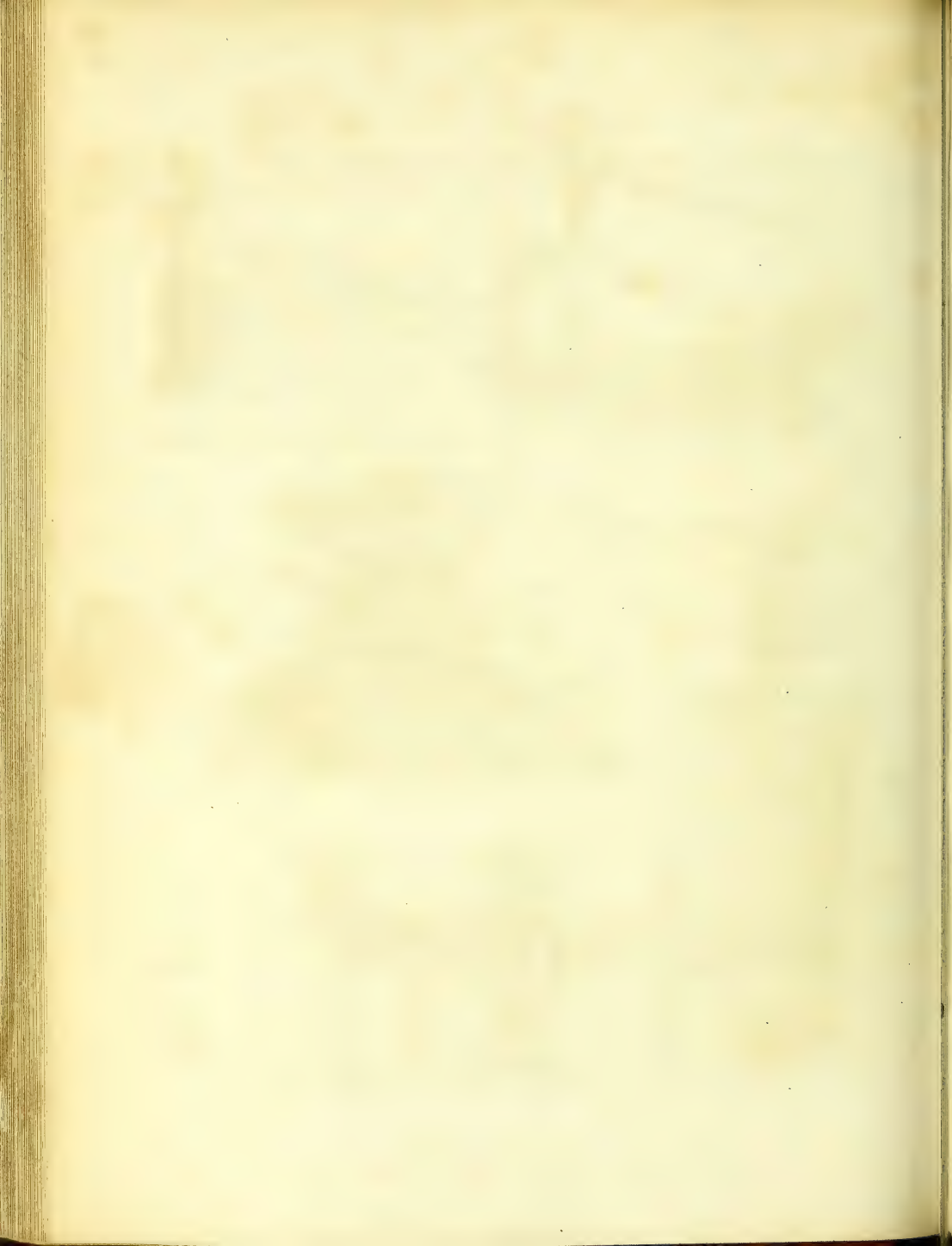


Fig. 11





MECHANICS.

CENTER OF FRICTION, CENTER OF GRAVITY &c.

Fig. 21.

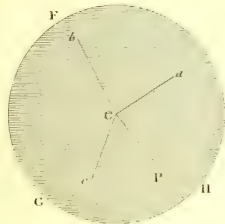


Fig. 22.

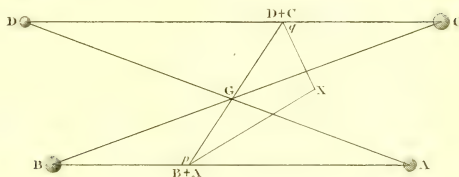


Fig. 23.

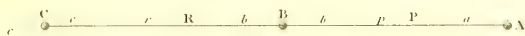


Fig. 24.

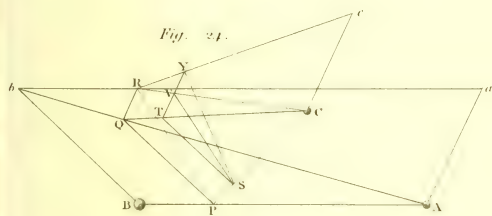


Fig. 25.

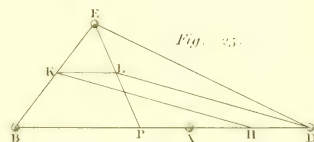


Fig. 26.

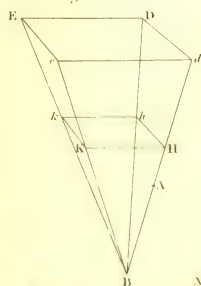


Fig. 27.

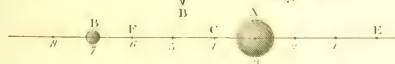


Fig. 28.

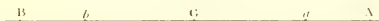
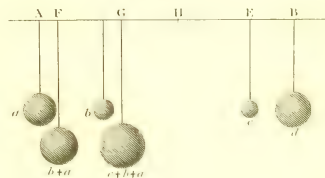
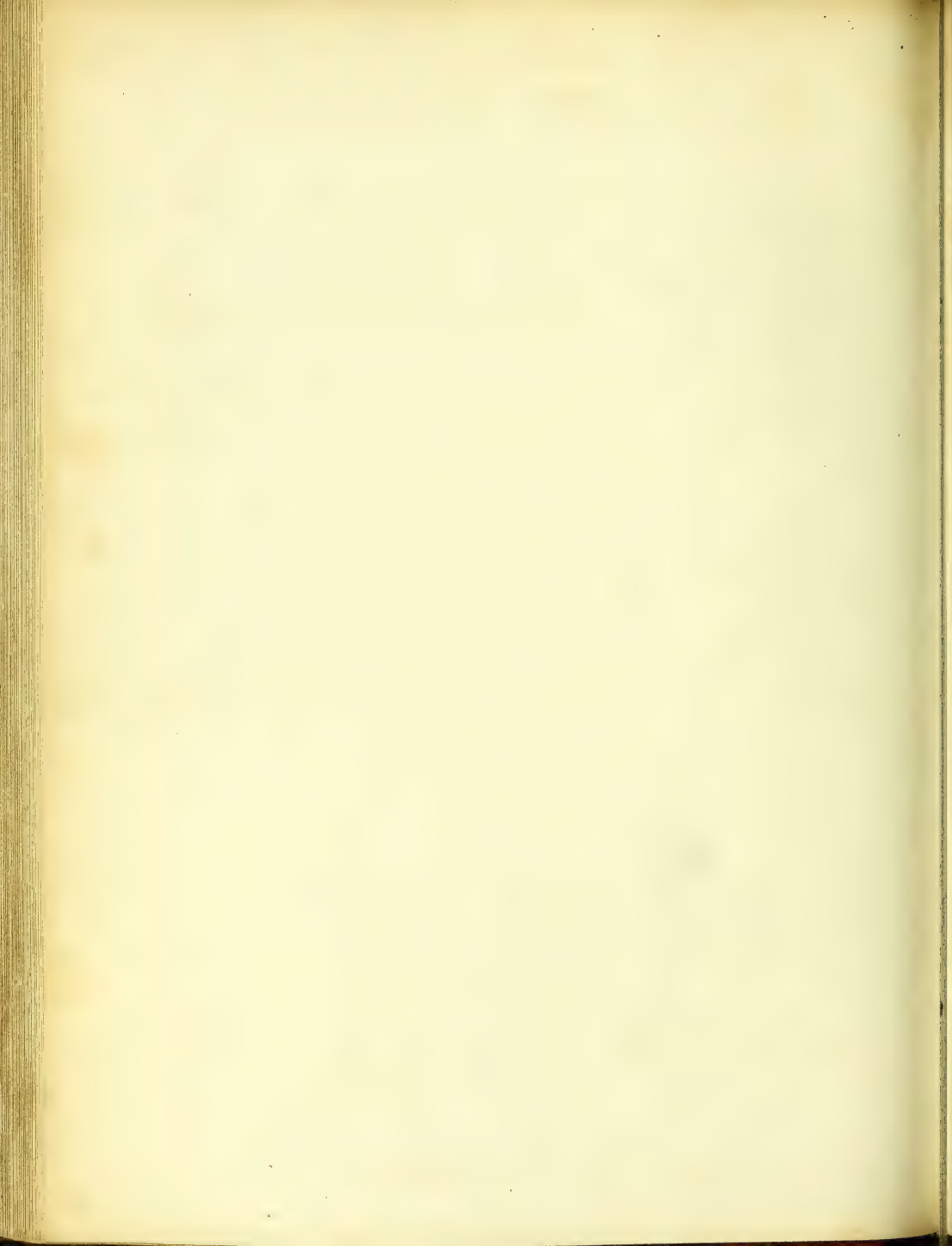


Fig. 29.





CENTER OF GRAVITY.

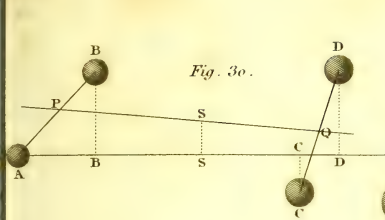


Fig. 30.

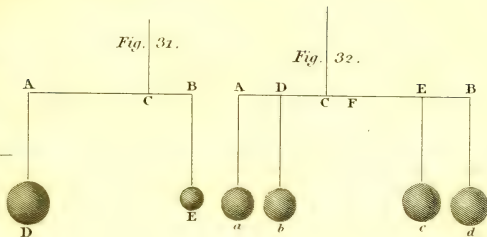


Fig. 31.

Fig. 32.

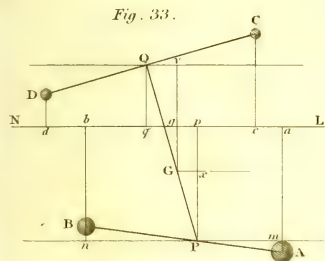


Fig. 33.

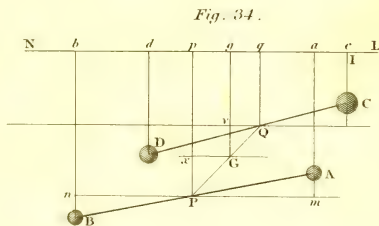


Fig. 34.

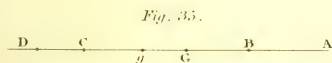


Fig. 35.

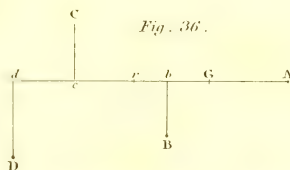


Fig. 36.

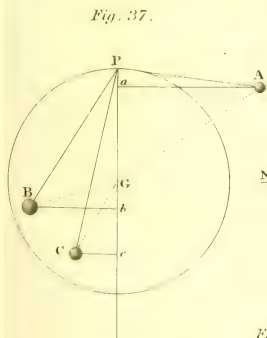


Fig. 37.

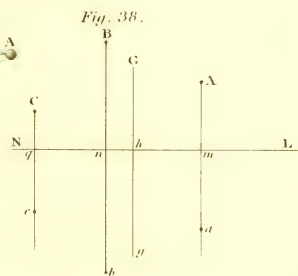


Fig. 38.

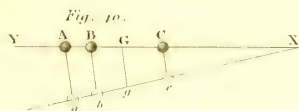


Fig. 39.

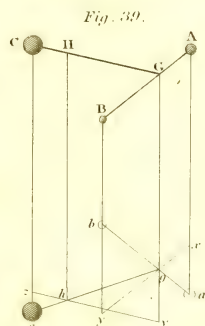
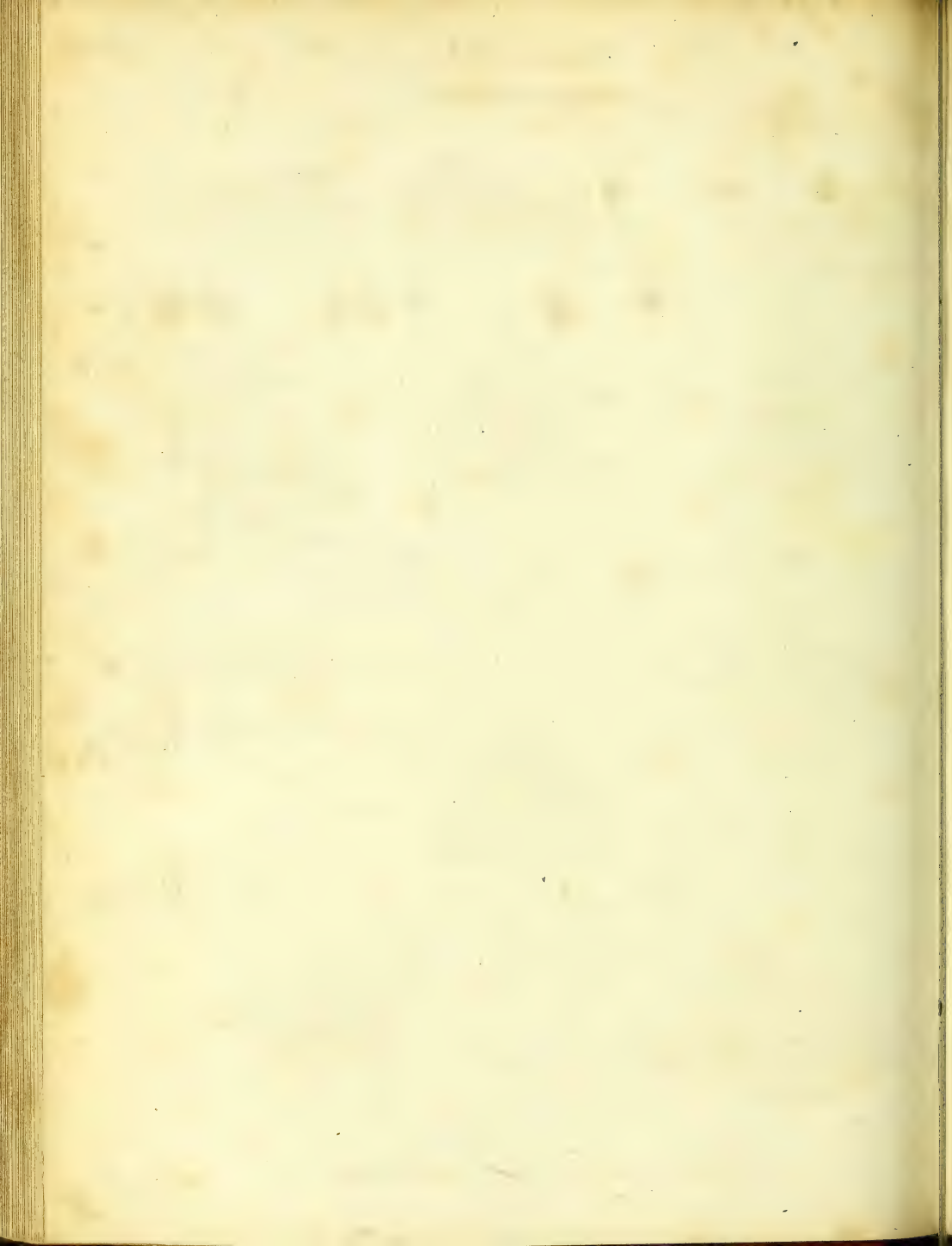


Fig. 40.



CENTER OF GRAVITY.

Fig. 41.

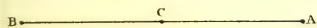


Fig. 42.

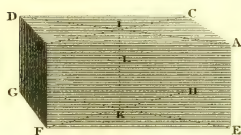


Fig. 43.

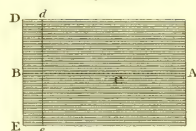


Fig.

44.

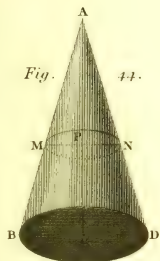


Fig.

45.

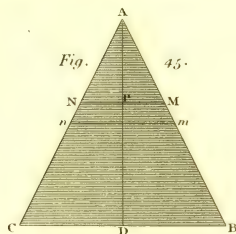


Fig.

46.

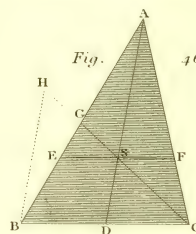


Fig. 47.

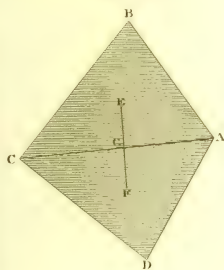


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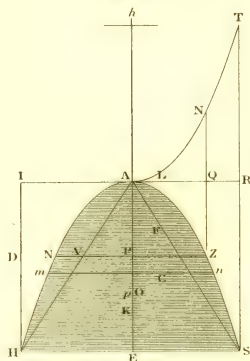


Fig. 49.

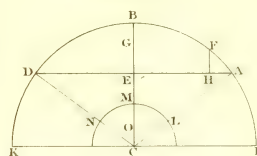


Fig. 50.

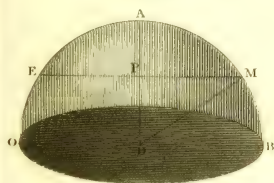
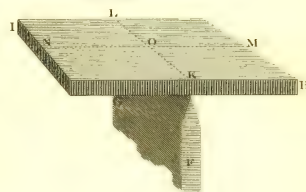
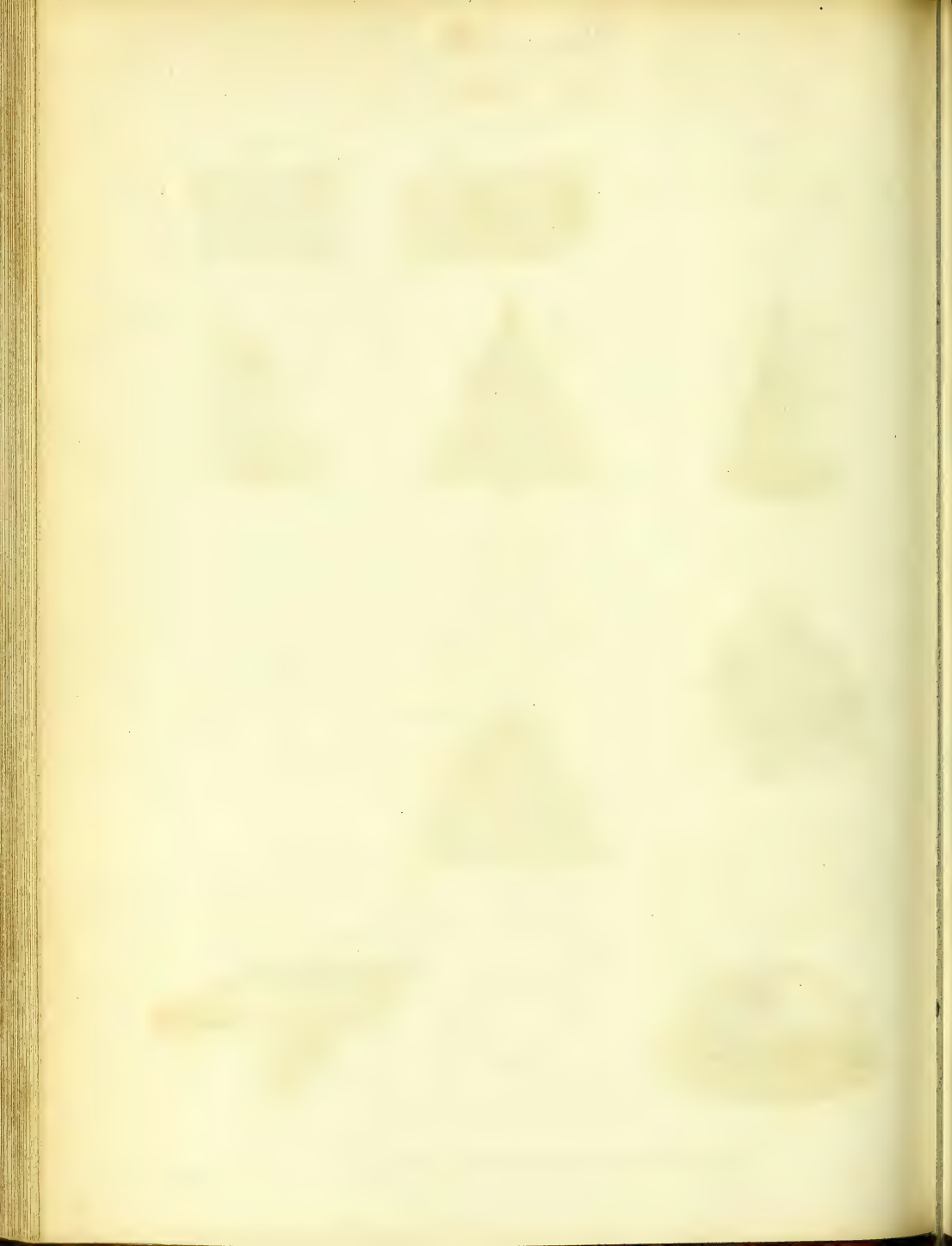


Fig. 51.





CENTER OF GYRATION, OSCILLATION &c.

Fig. 52.

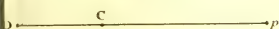


Fig. 53.

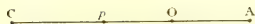


Fig. 54.

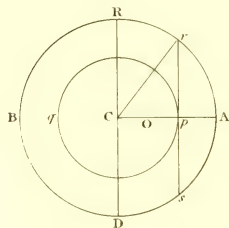


Fig. 55.

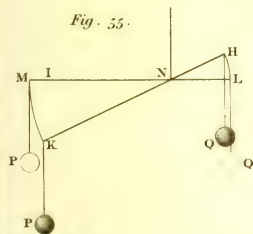


Fig. 56.

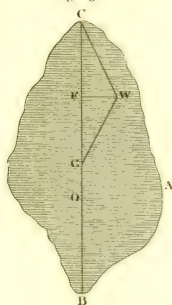


Fig. 57.

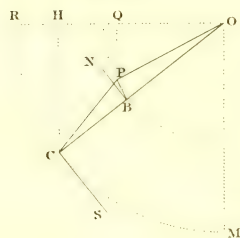


Fig. 58.

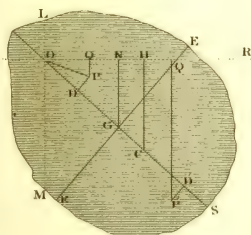


Fig. 59.

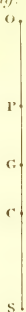
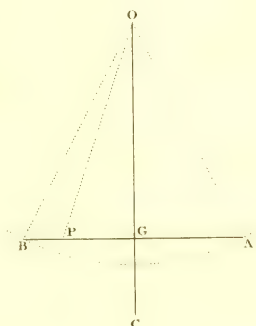
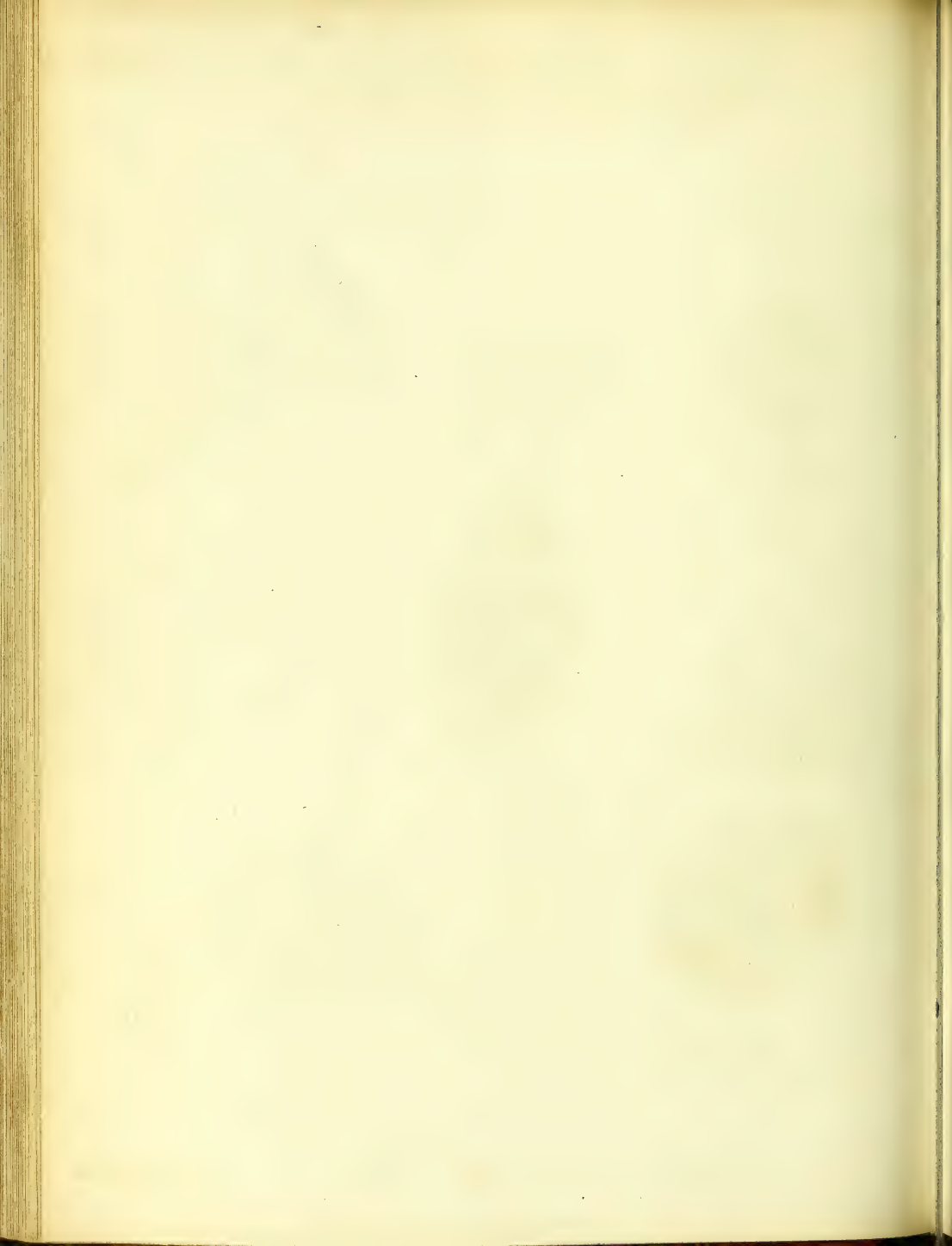


Fig. 60.





CENTER OF OSCILLATION AND CENTER OF PERCUSSION.

Fig. 61.

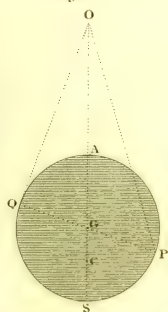


Fig. 62.

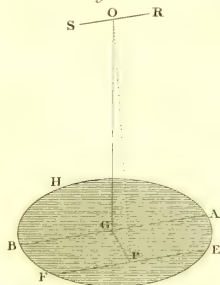


Fig. 63.

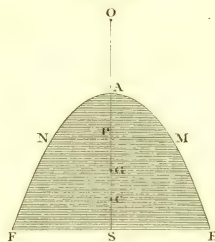


Fig. 64.

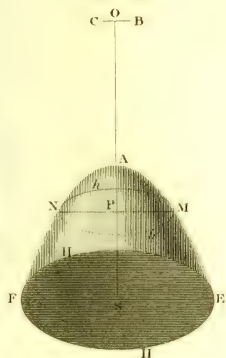


Fig. 65.

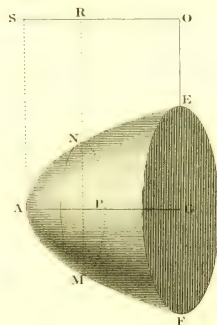


Fig. 66.

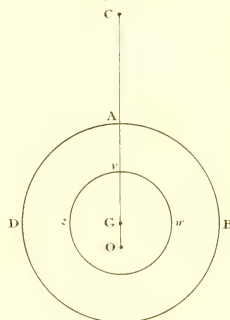


Fig. 68.

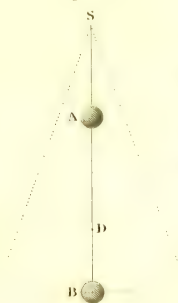


Fig. 69.

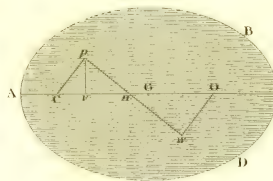
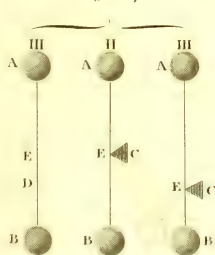
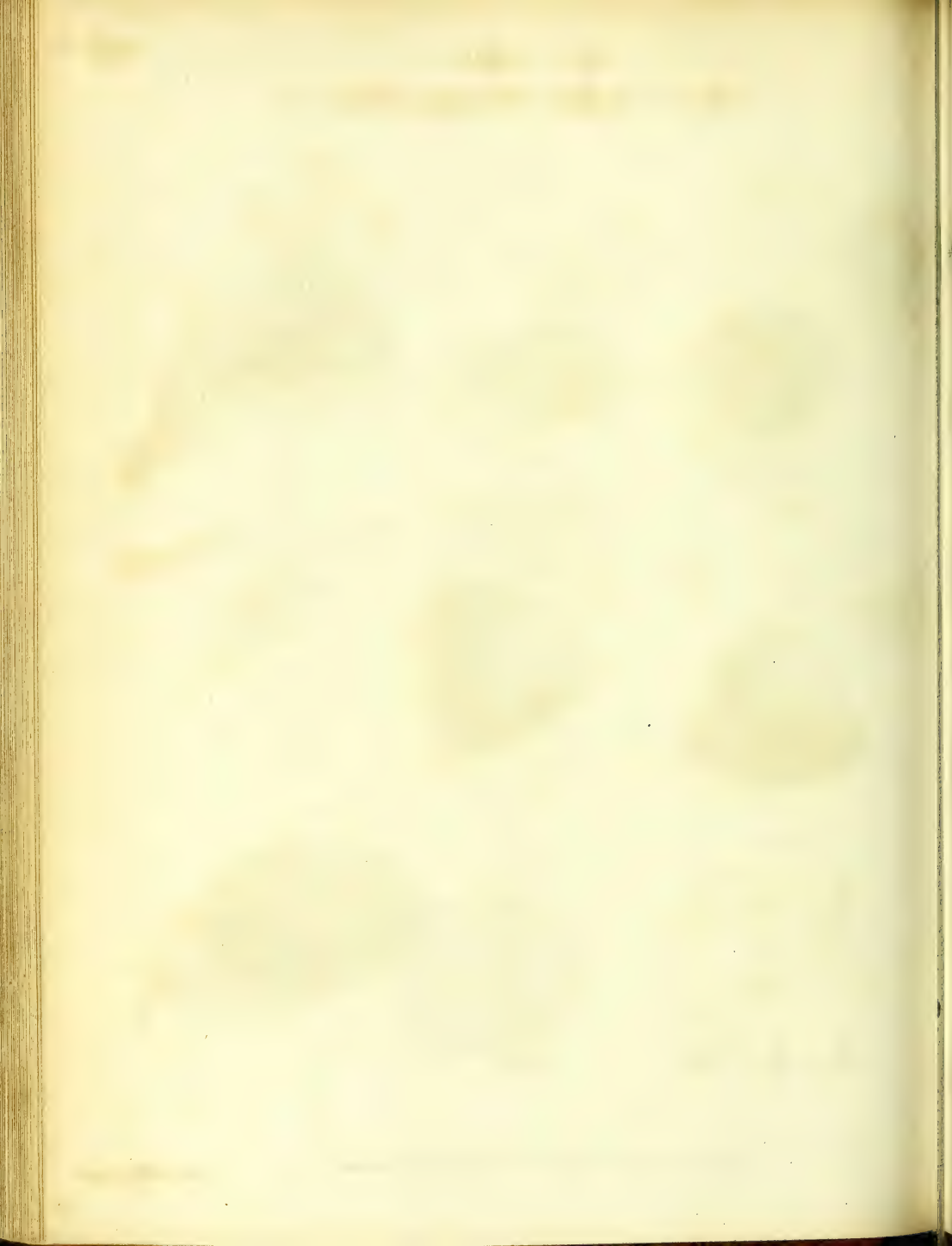


Fig. 67.





CENTER OF POSITION, OF PRESSURE, OF ROTATION &c.

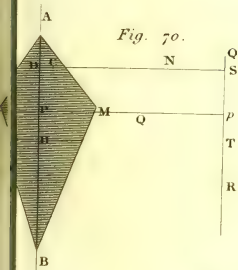


Fig. 70.

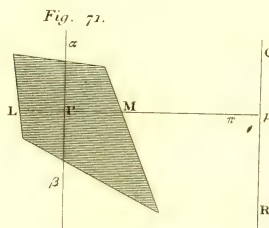


Fig. 71.

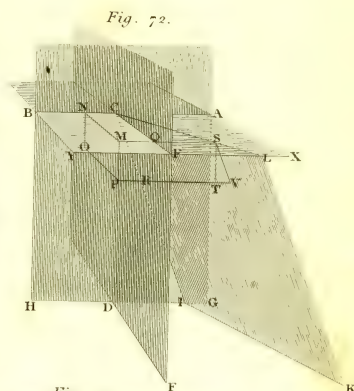


Fig. 72.

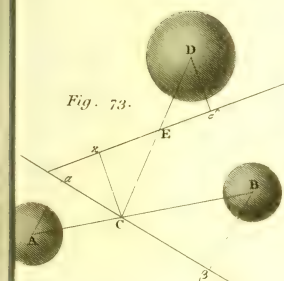


Fig. 73.

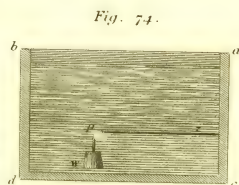


Fig. 74.

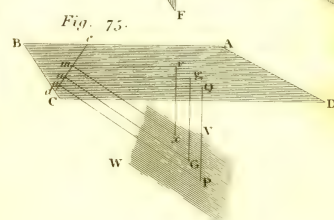


Fig. 75.

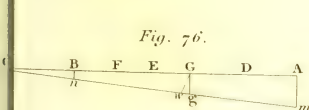


Fig. 76.

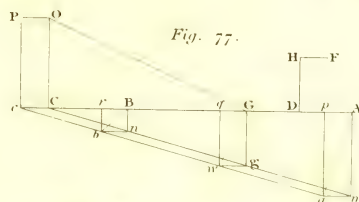


Fig. 77.

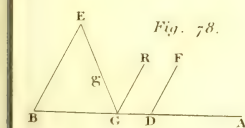


Fig. 78.

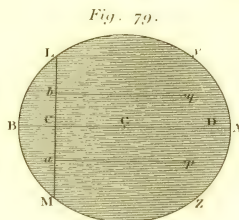


Fig. 79.

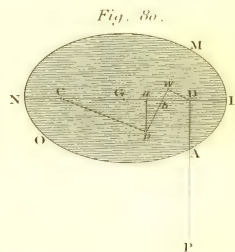
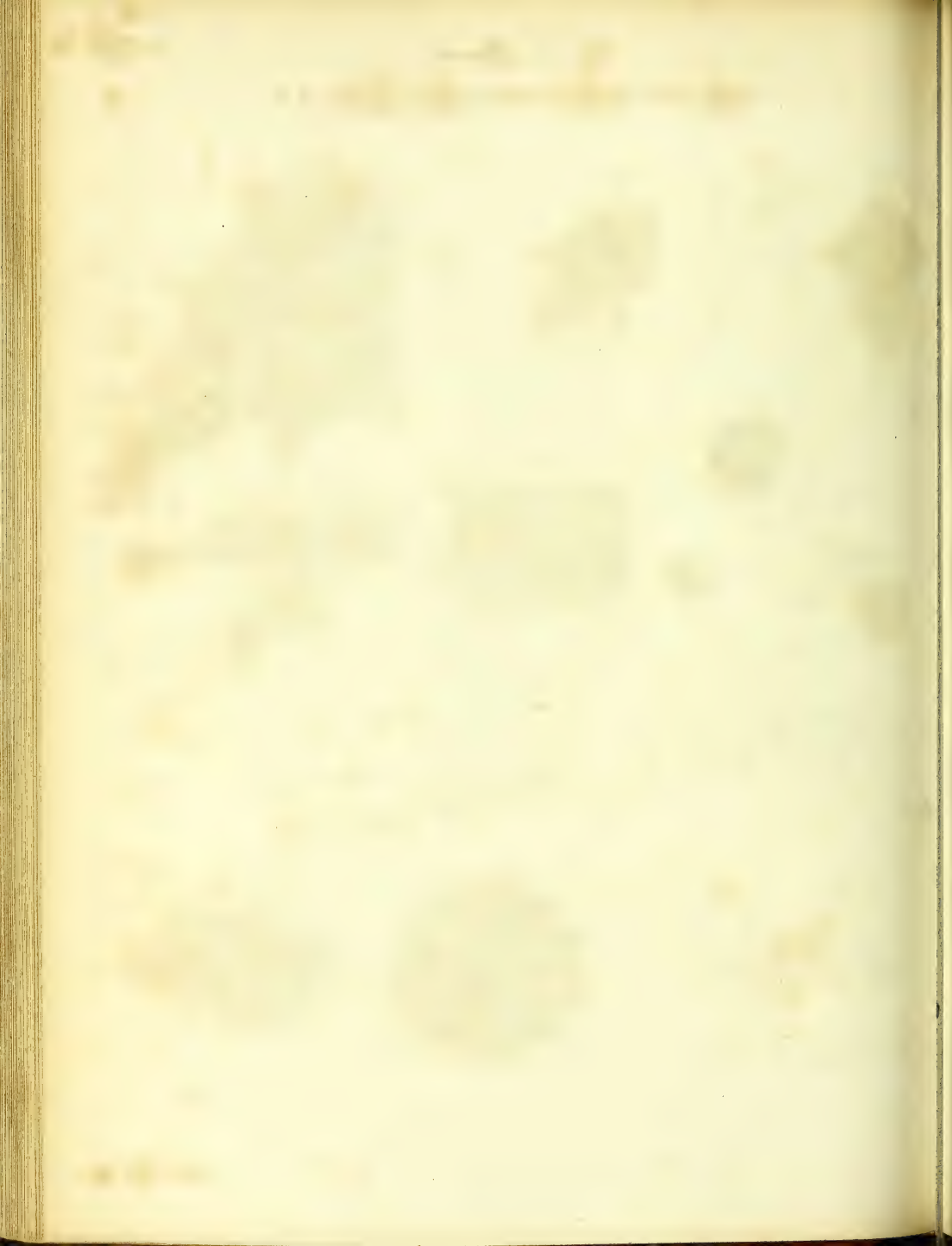


Fig. 80.



CENTRAL, CENTRIFUGAL, AND CENTRIPETAL FORCES.

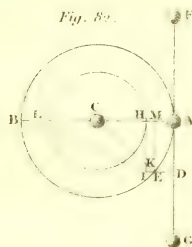
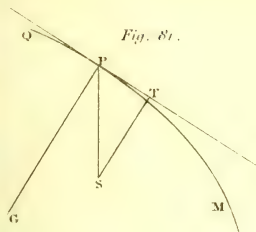


Fig. 84.

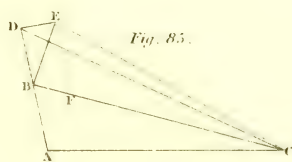
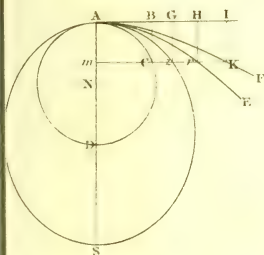


Fig. 86.

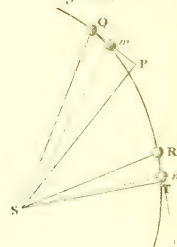


Fig. 87.

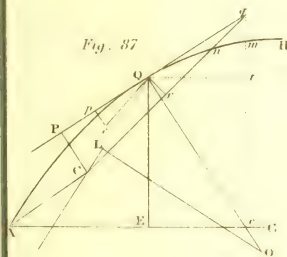


Fig. 88.

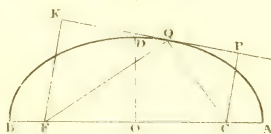


Fig. 89.

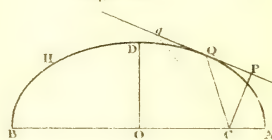


Fig. 90.

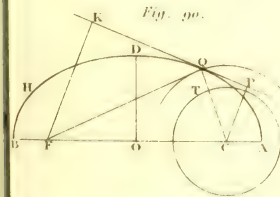
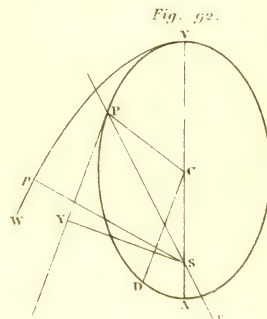
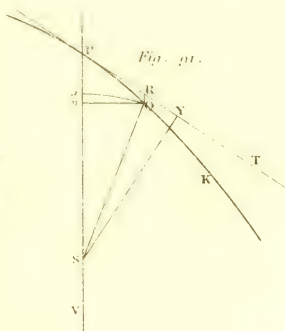
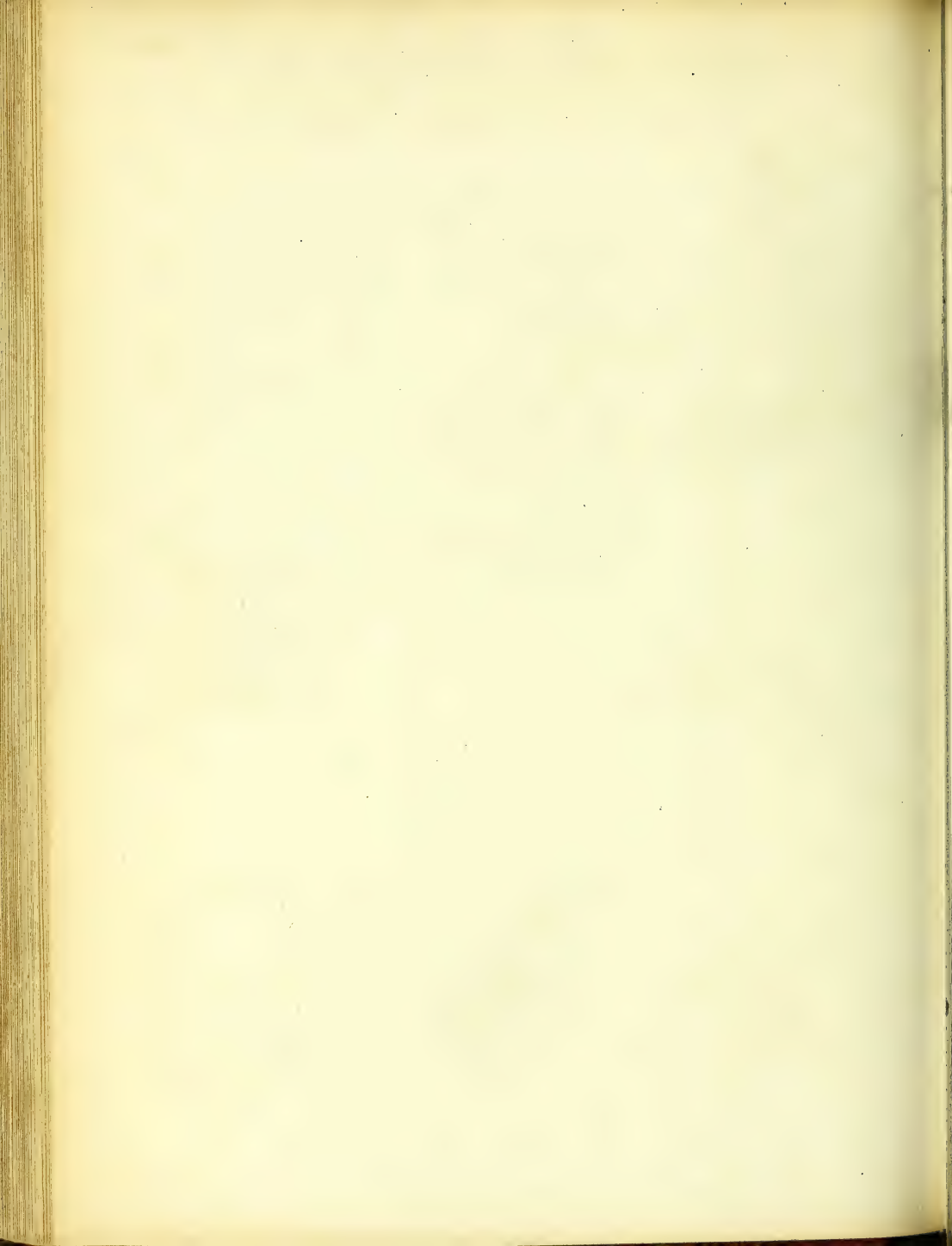


Fig. 91.





MECHANICS.

CENTRIFUGAL MACHINE AND CENTROBARYC METHOD.

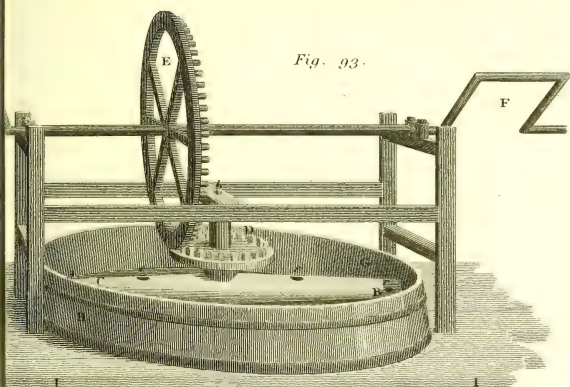


Fig. 93.

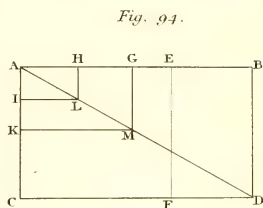


Fig. 94.

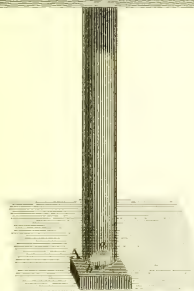


Fig. 95.

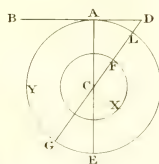


Fig. 96.

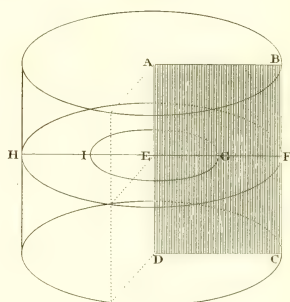


Fig. 97.

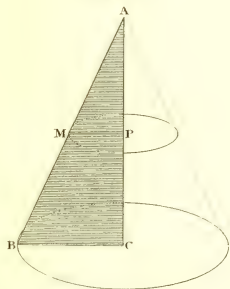


Fig. 98.

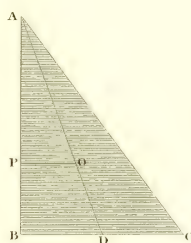
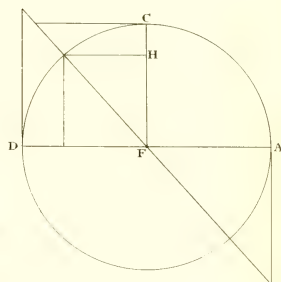


Fig. 99.



CHAINS.

Fig. 1.

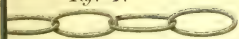


Fig. 2.



Fig. 3.



Fig. 4.

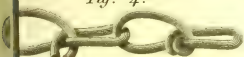


Fig. 5.

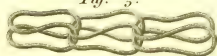


Fig. 6.



Fig. 7.

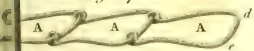


Fig. 8.



Fig. 9.



Fig. 10.

CLAY MILL.

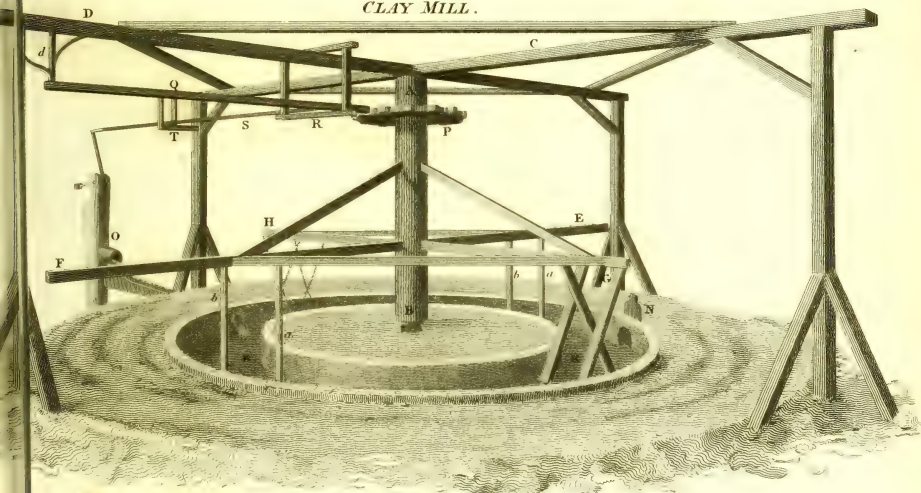
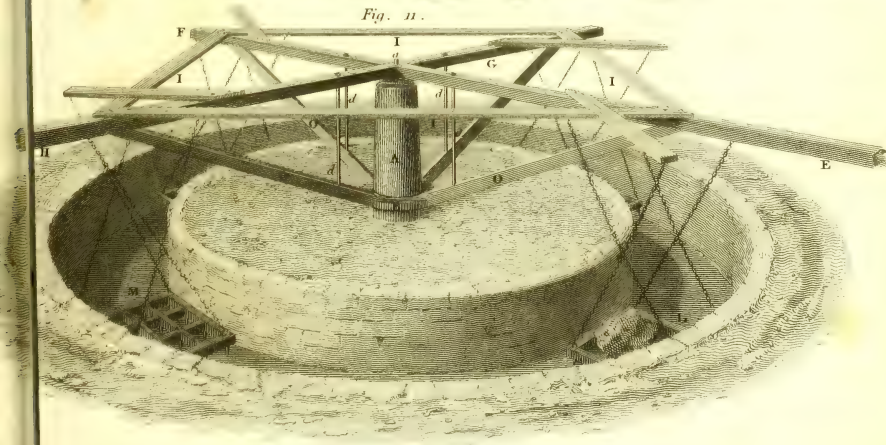
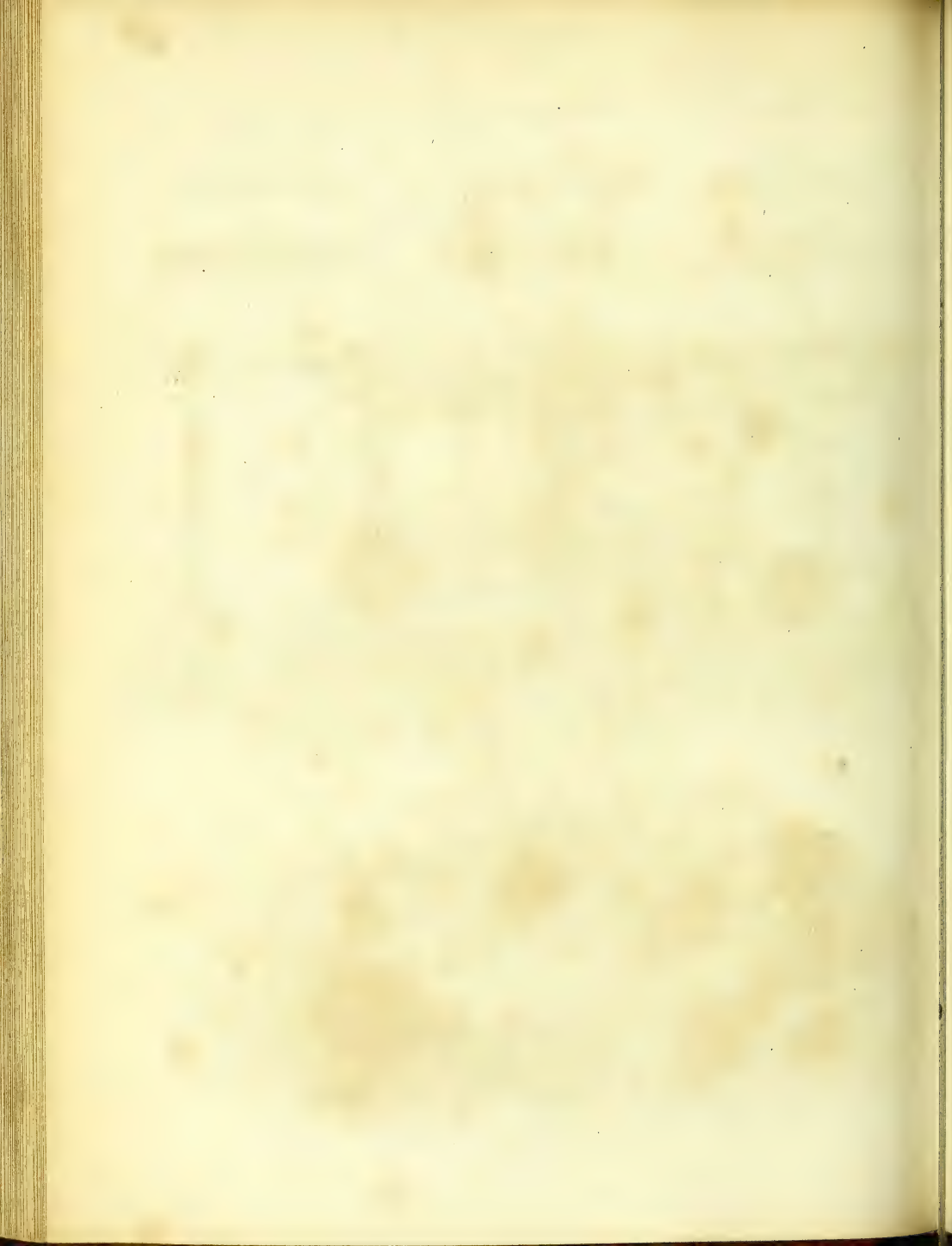
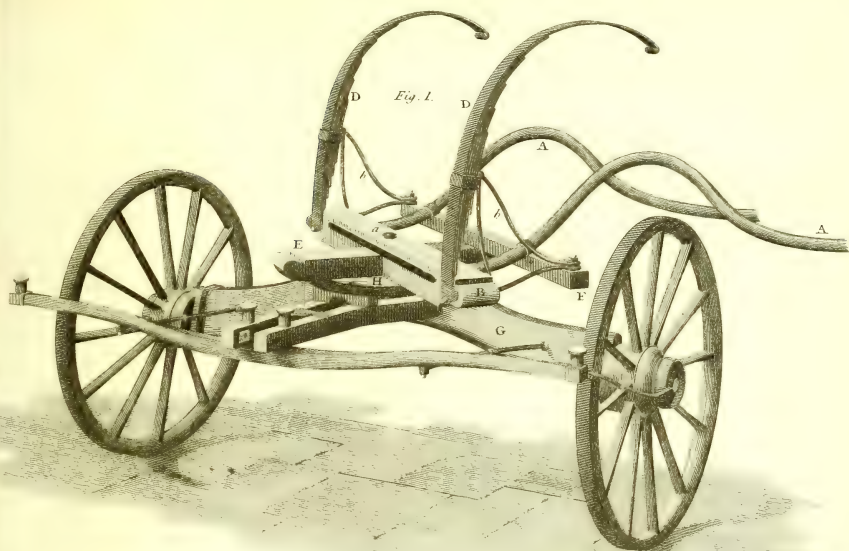


Fig. 11.

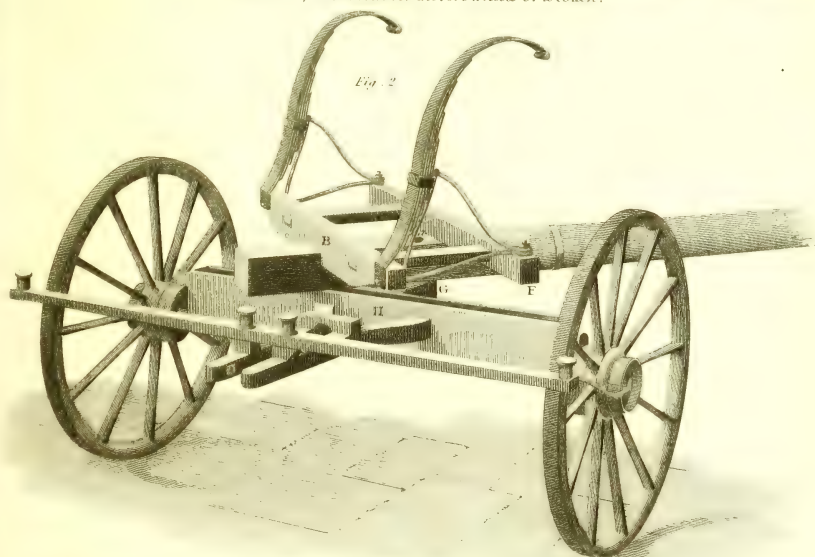


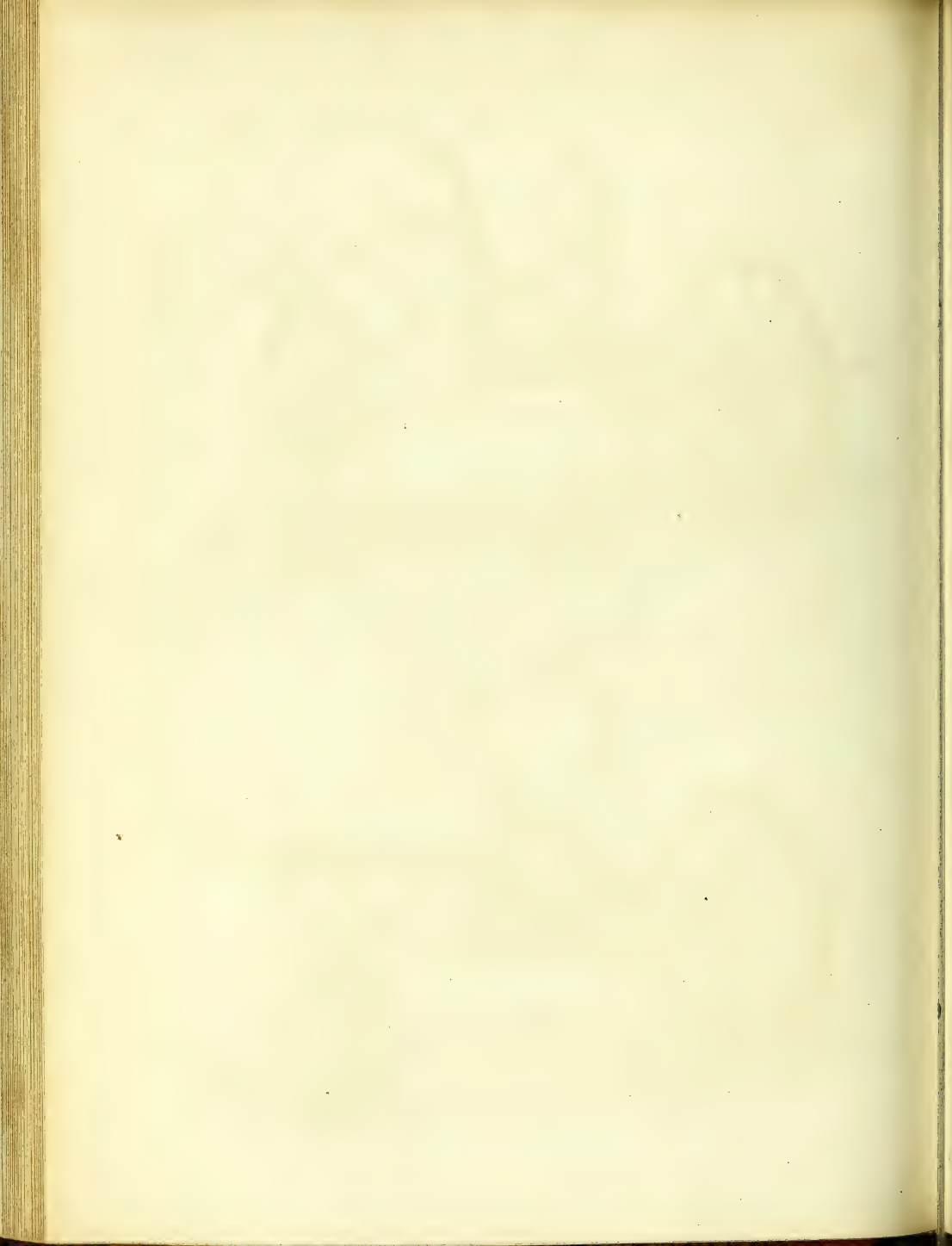


View of the fore wheels of a Crane necked Carriage.



Mr. Jacobs, contrivance for the fore wheels of a Coach.





MECHANICS.
COAL MEASURING.

PLATE XIV.

Fig. 1.

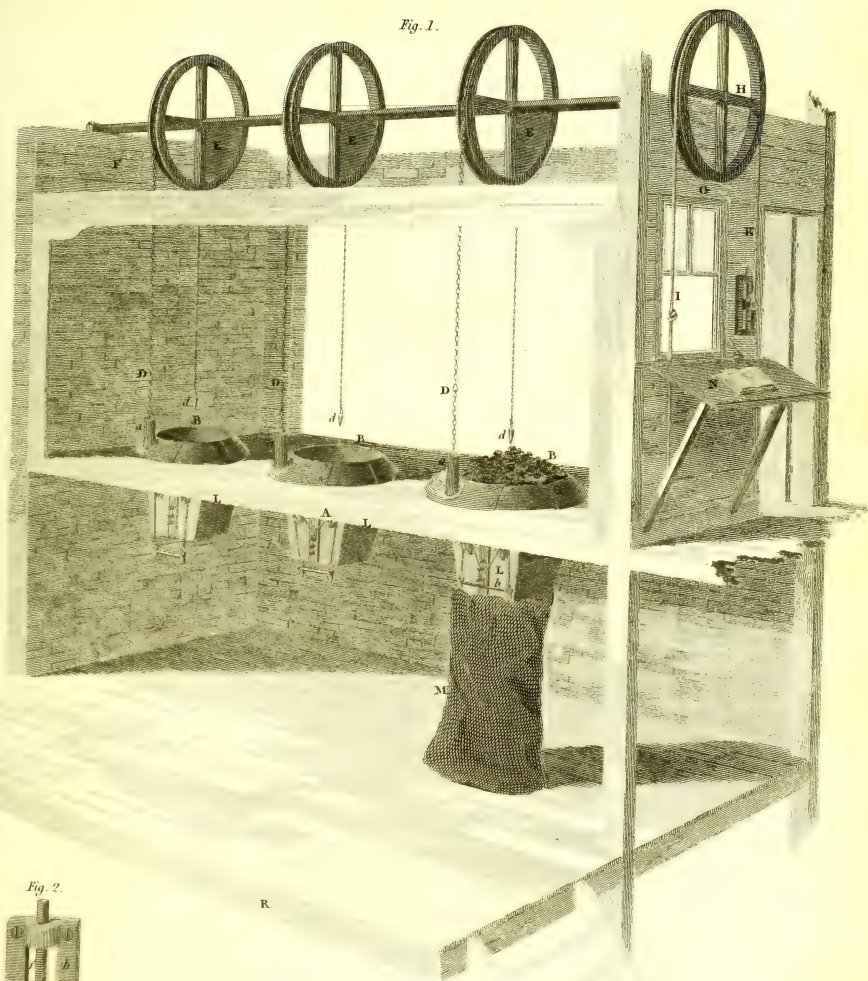
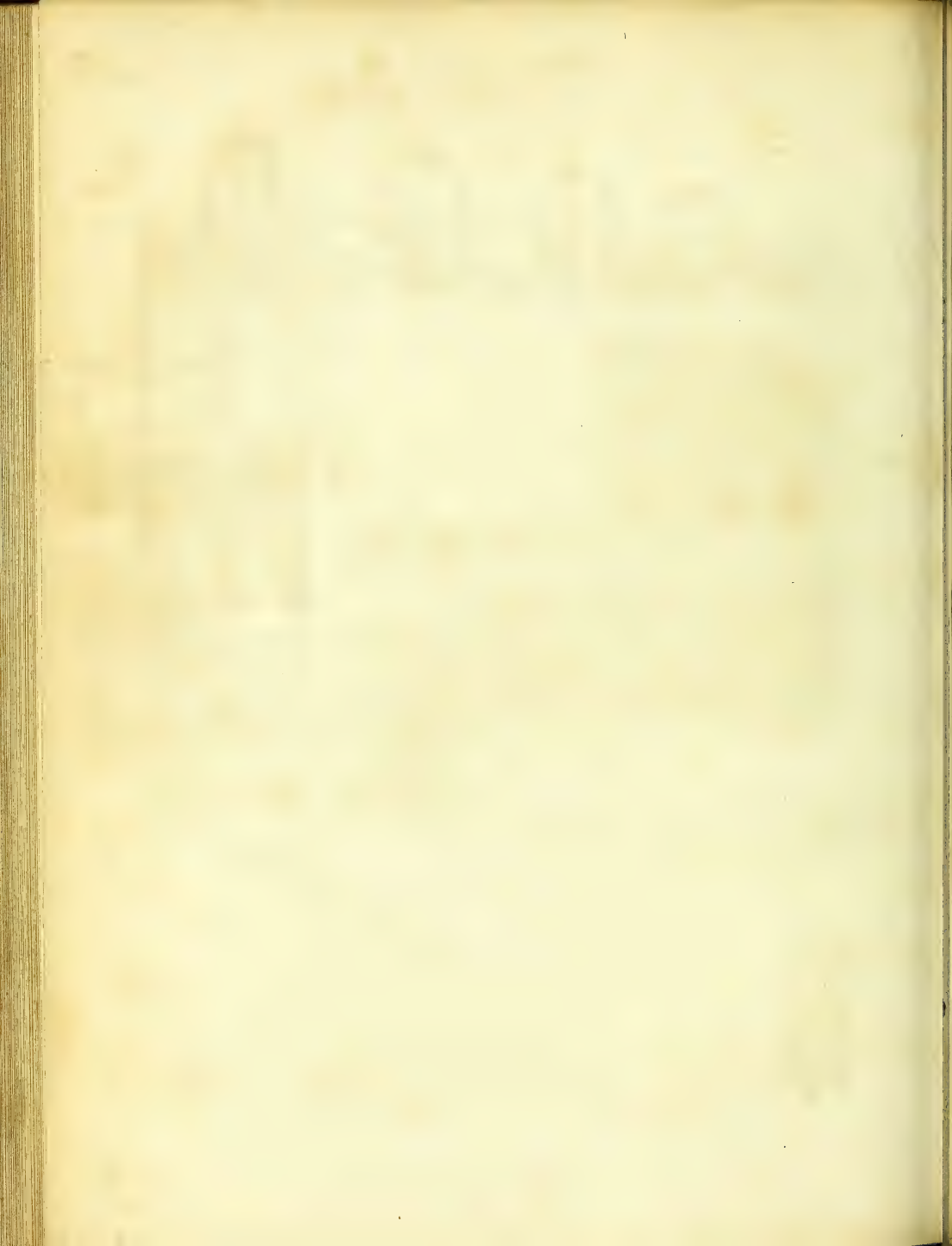


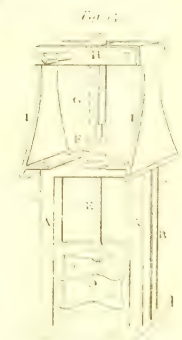
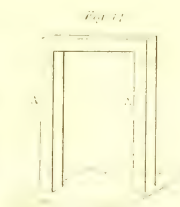
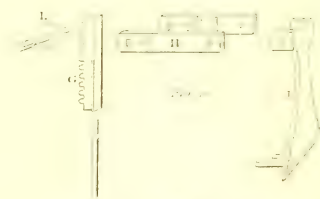
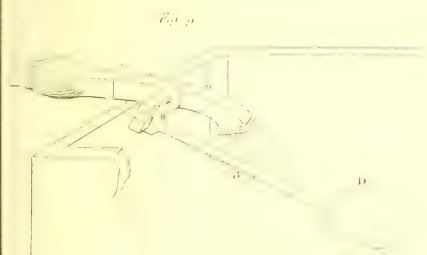
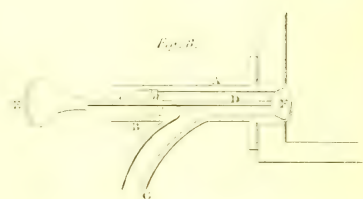
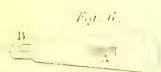
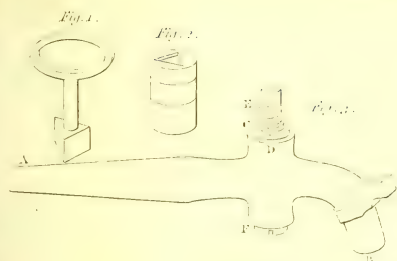
Fig. 2.

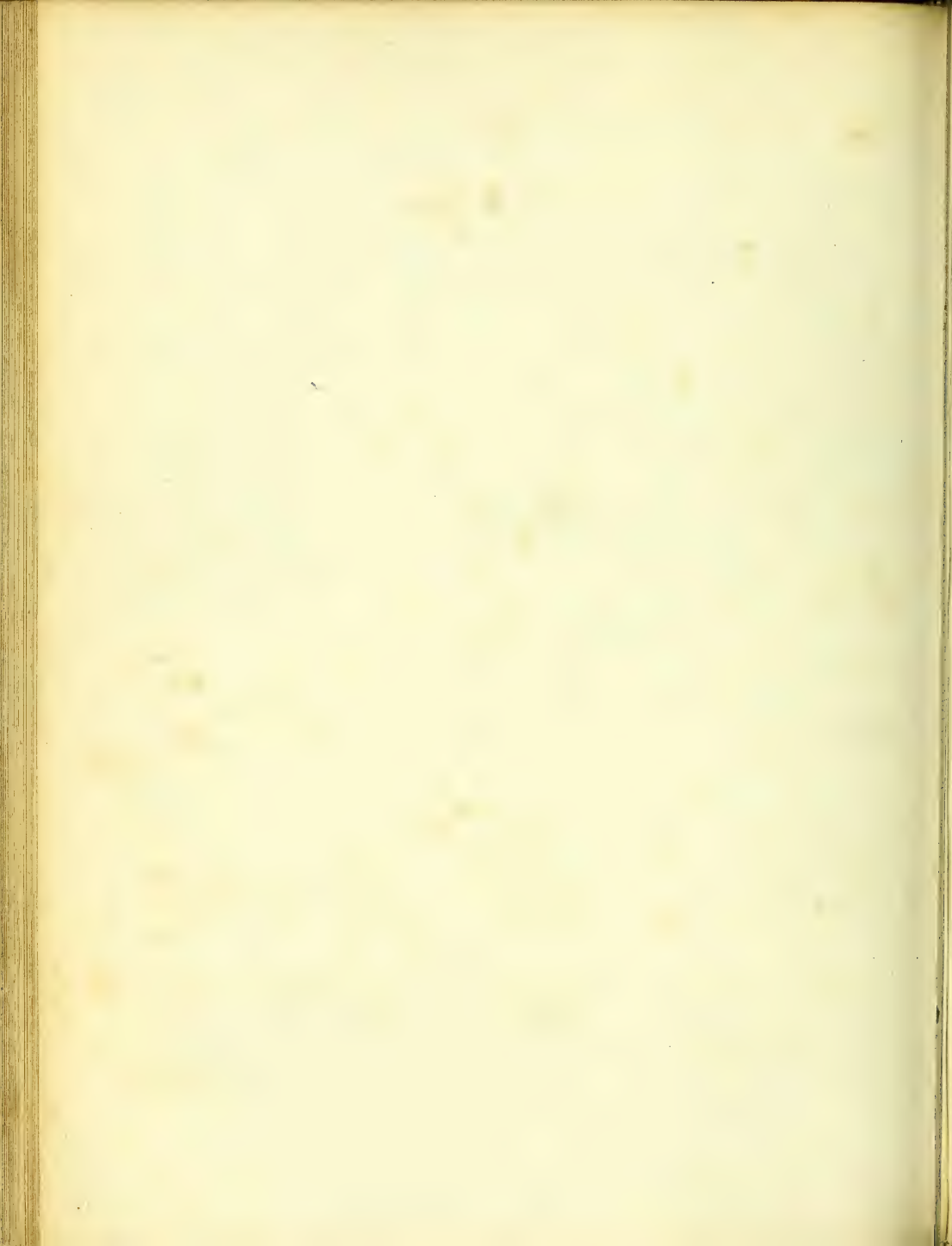




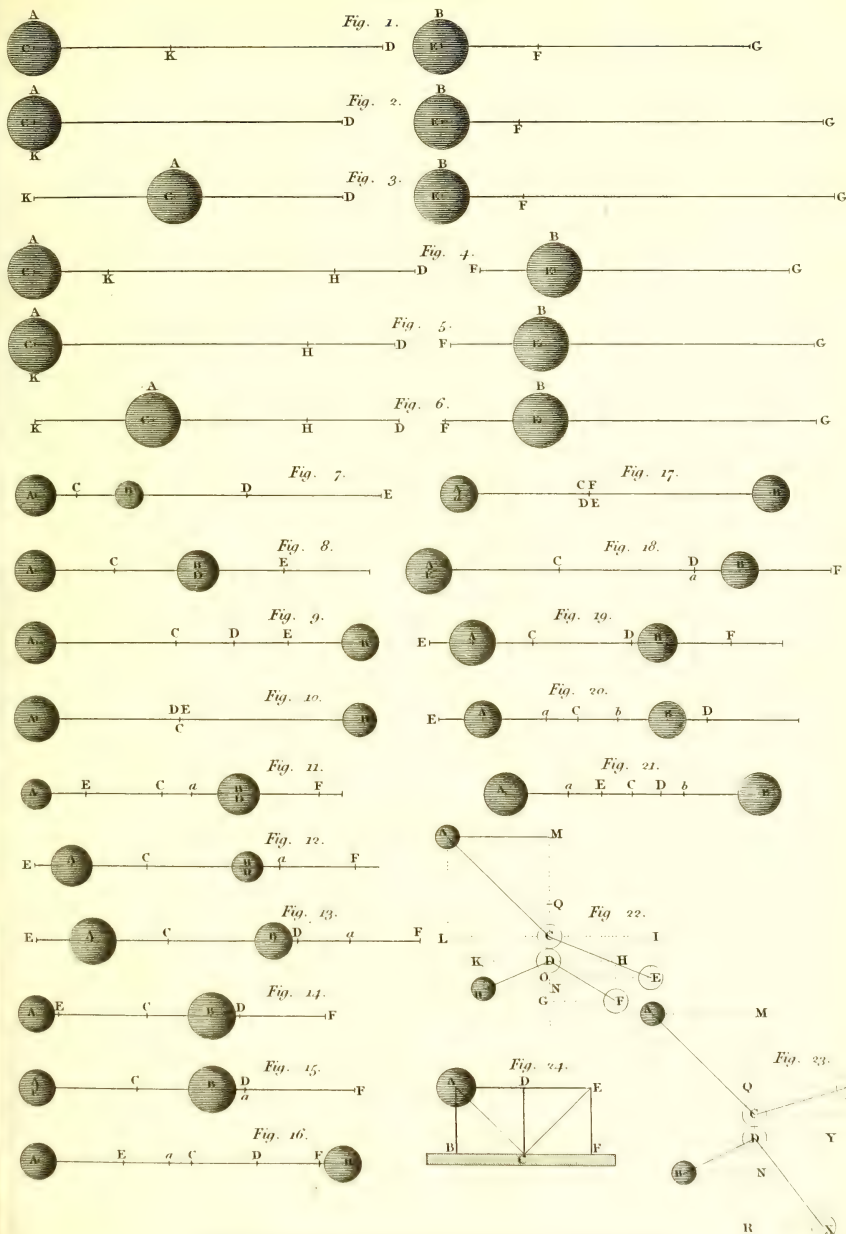
MECHANICS. WATER COCKS.

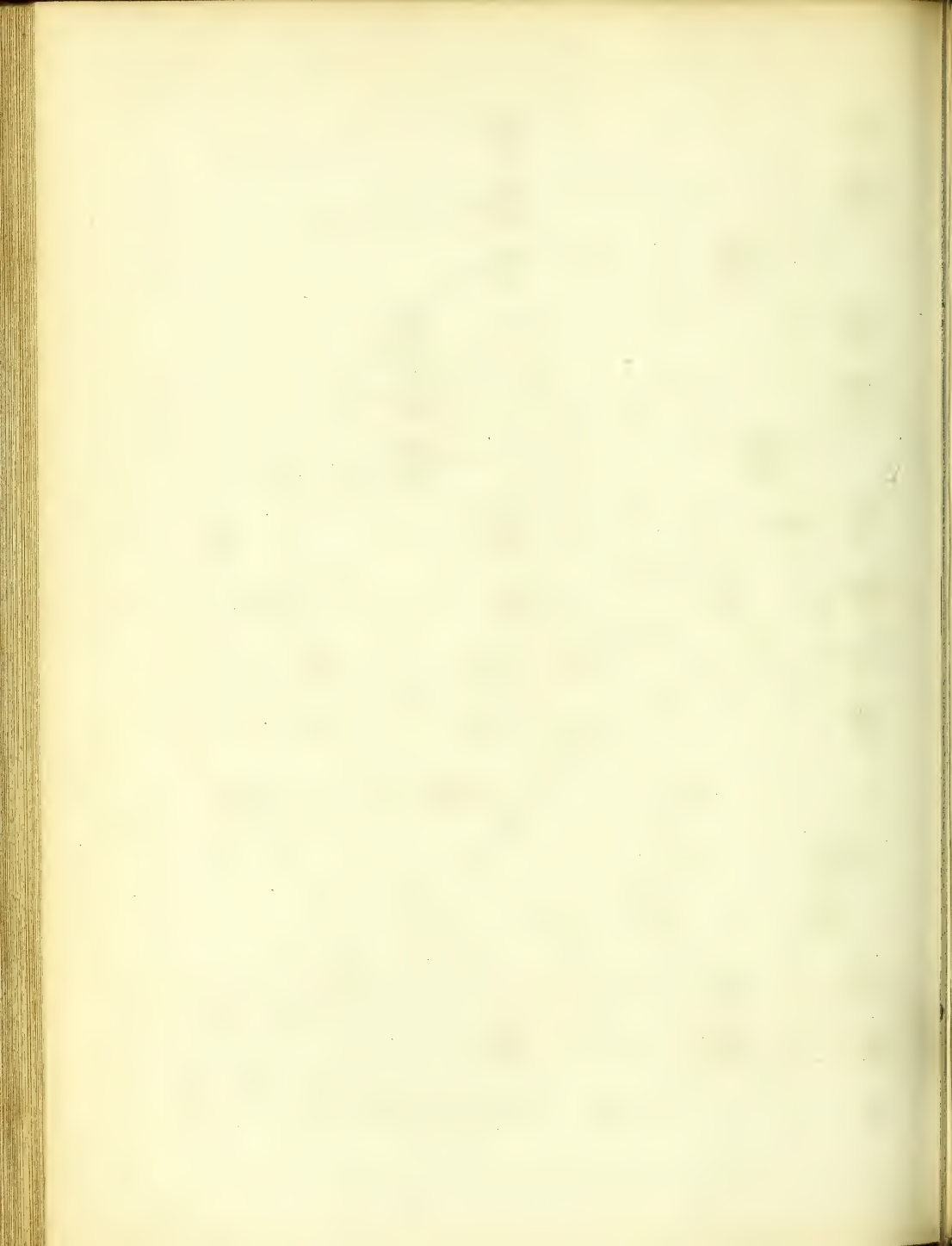
PLATE XIV.





COLLISION.





COMB MAKING.

Fig. 1.

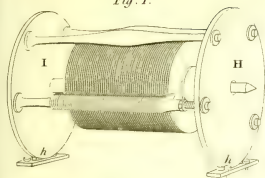


Fig. 2.



Fig. 3.

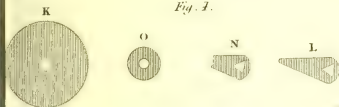


Fig. 5.

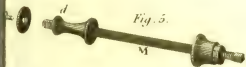


Fig. 6.



Fig. 7.



Fig. 3.

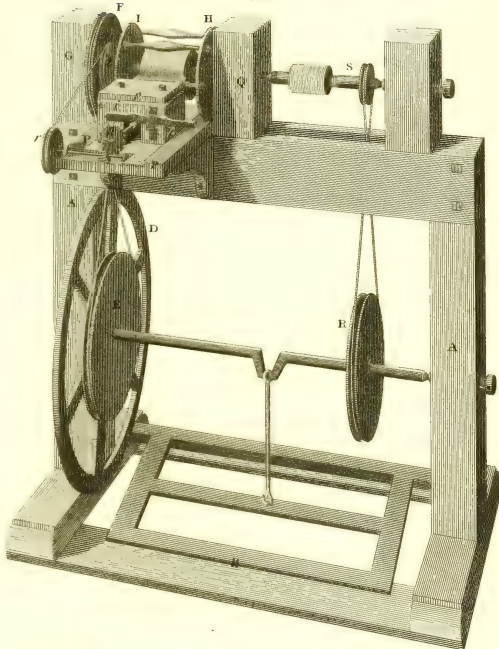


Fig. 6.

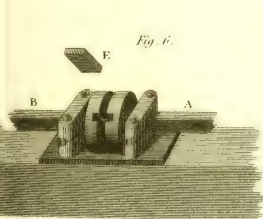


Fig. 7.

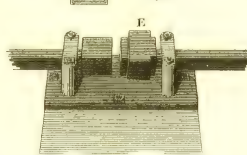
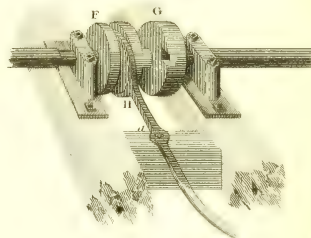
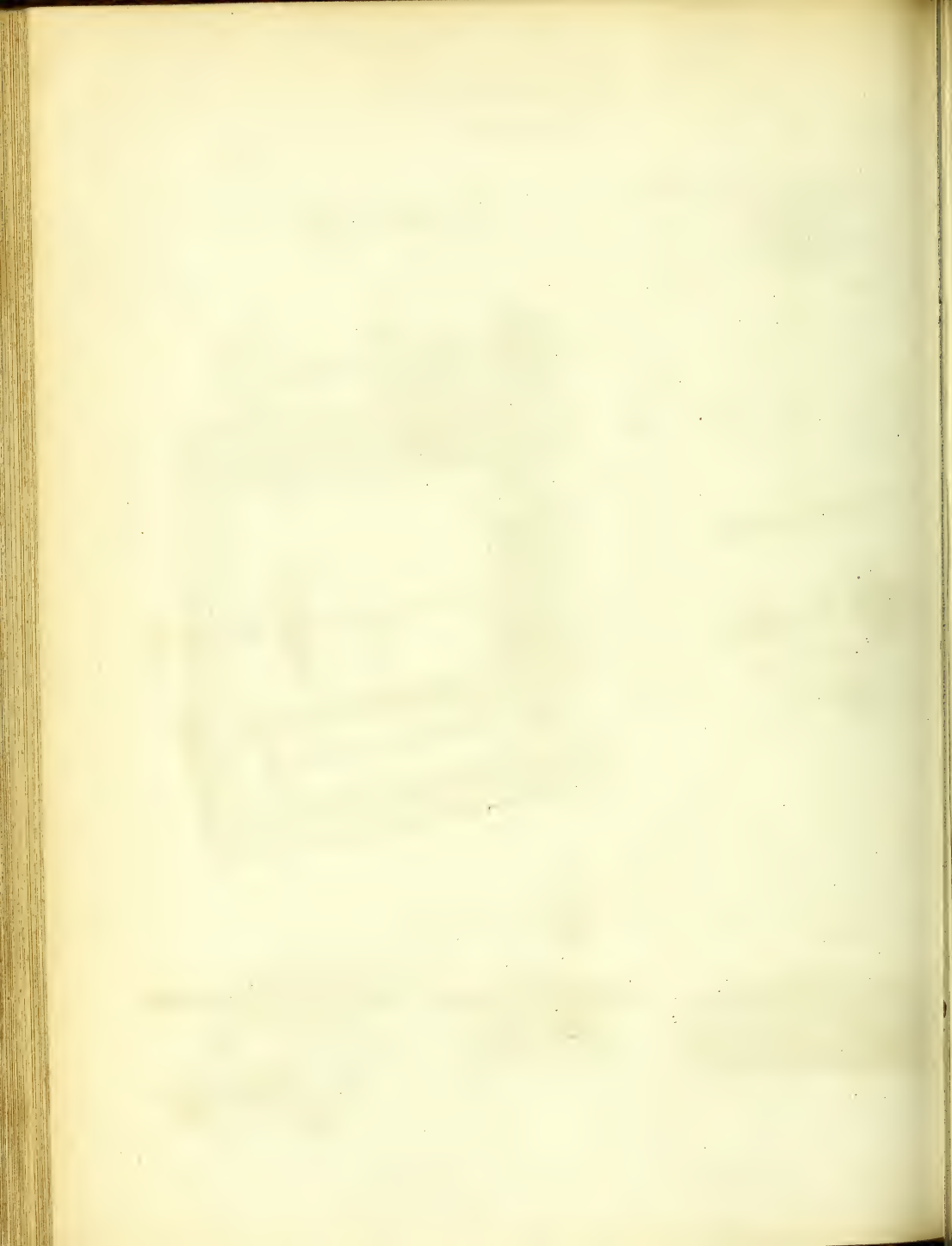


Fig. 8.





Prony's Condenser of Forces.

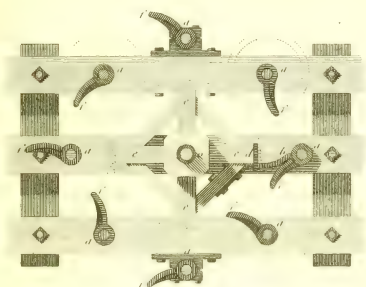


Fig. 10.

Composition of Motion.

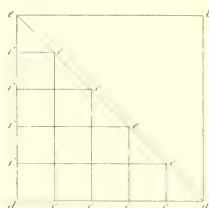
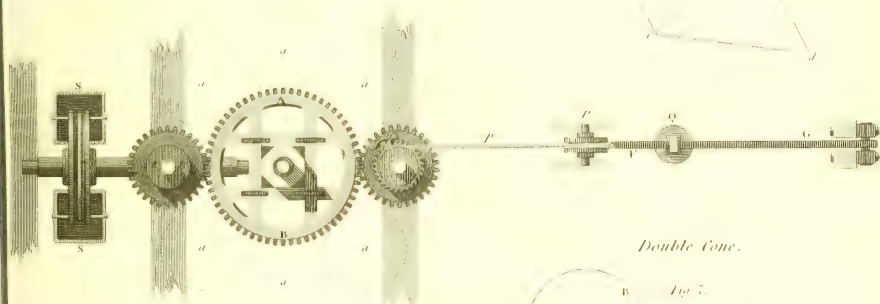


Fig. 1.

Plans.



Double Cone.

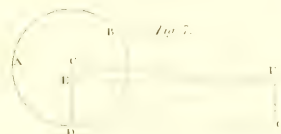
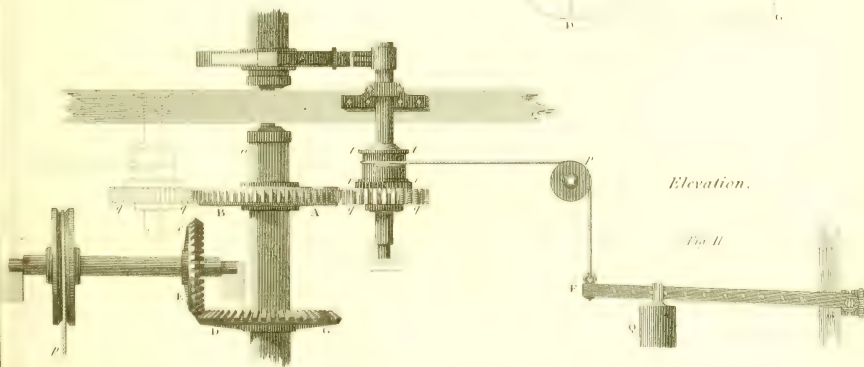
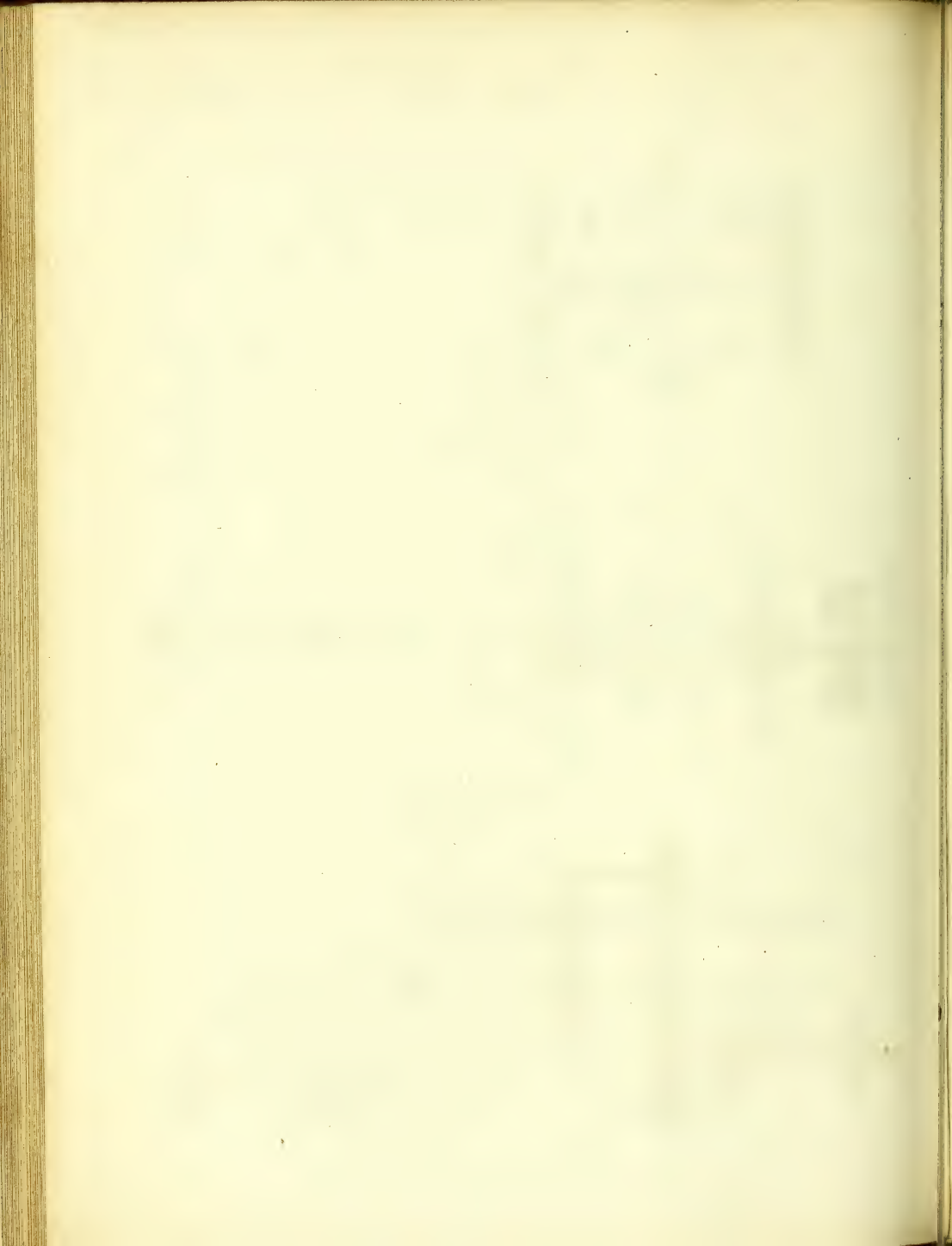


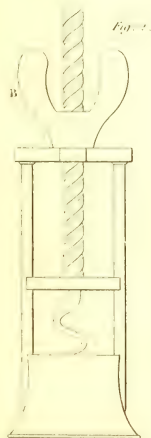
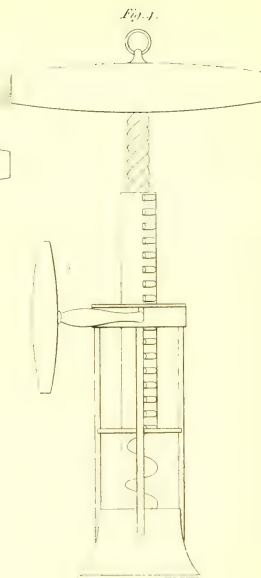
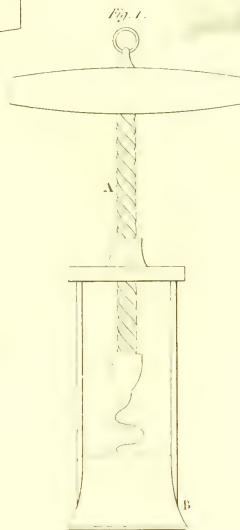
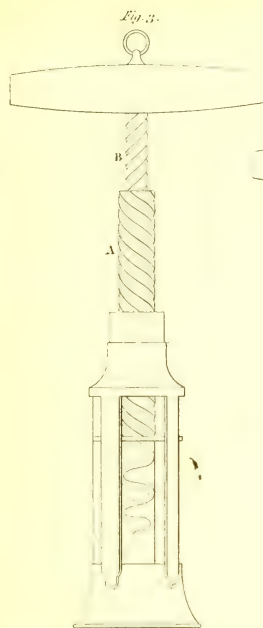
Fig. 7.



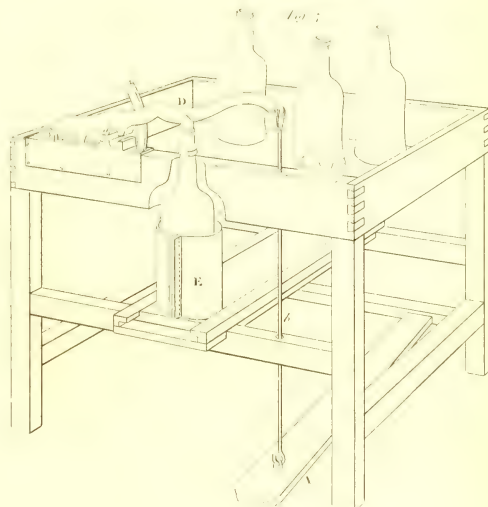
Elevation.

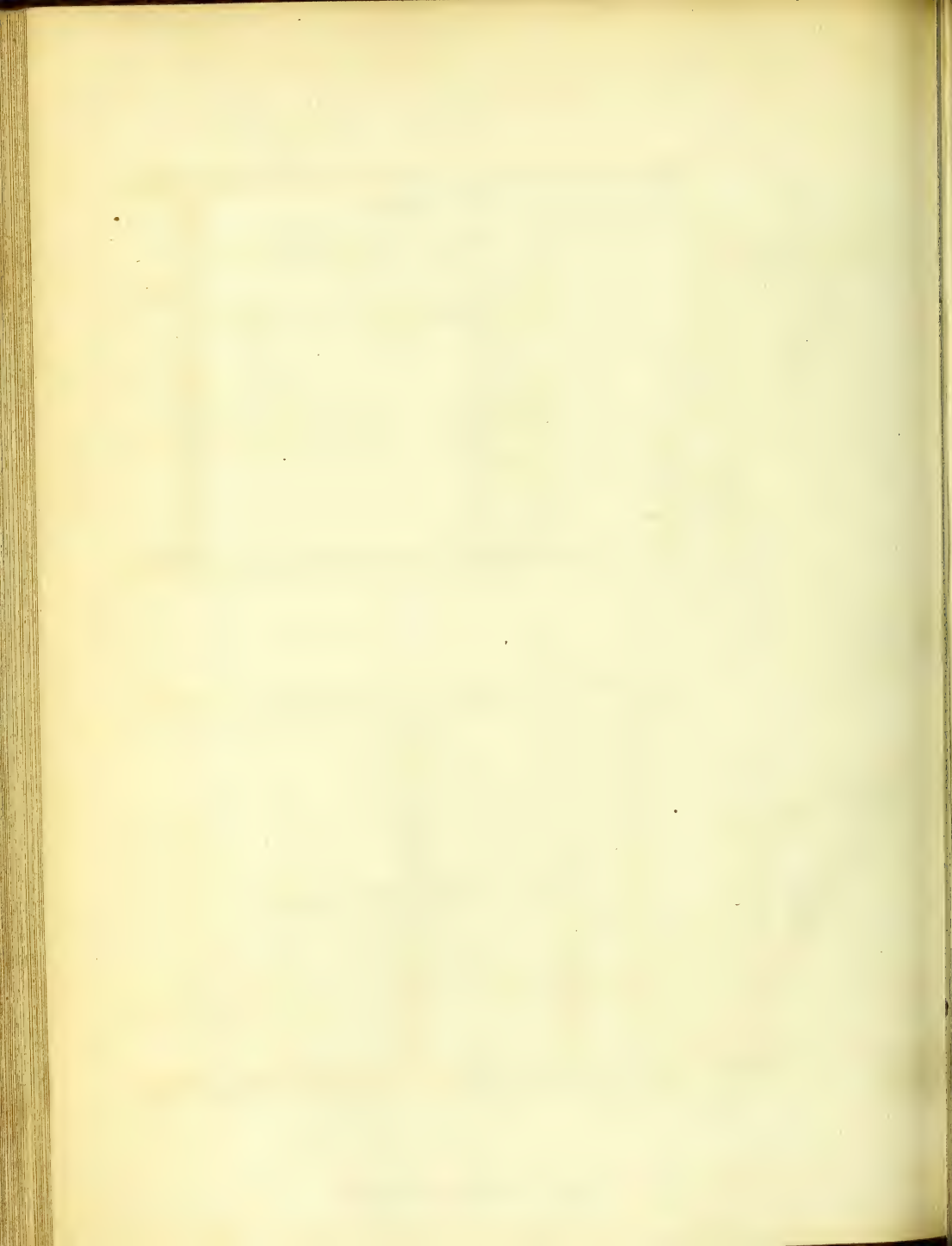
Fig. 11.





Corking Machine.





CRANES,
by M. Ferguson.

Fig. 2.

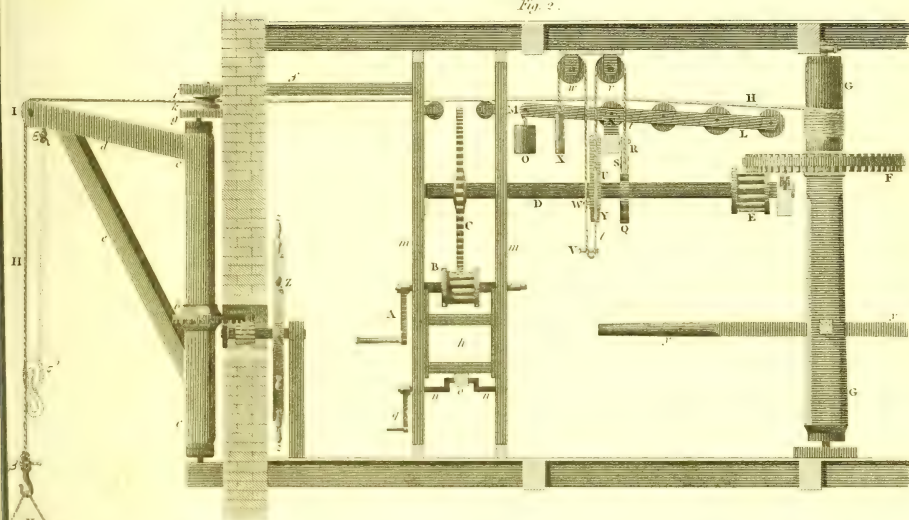
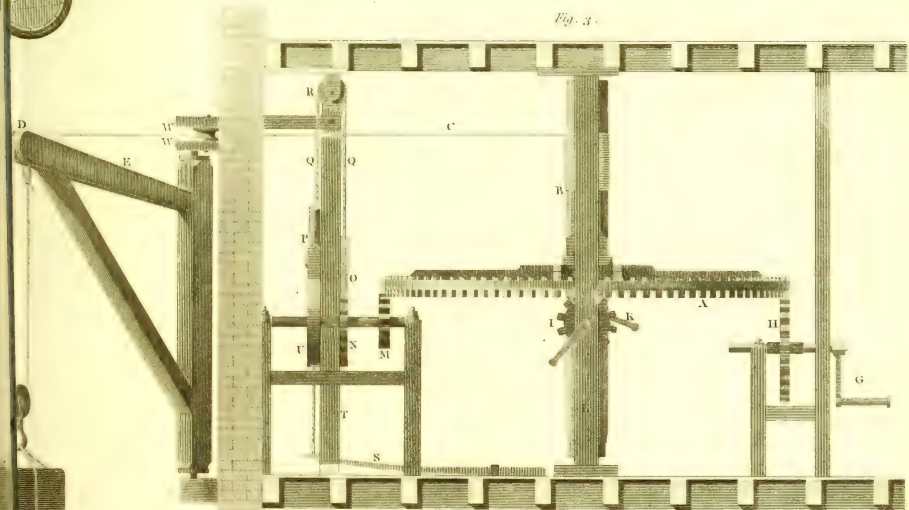
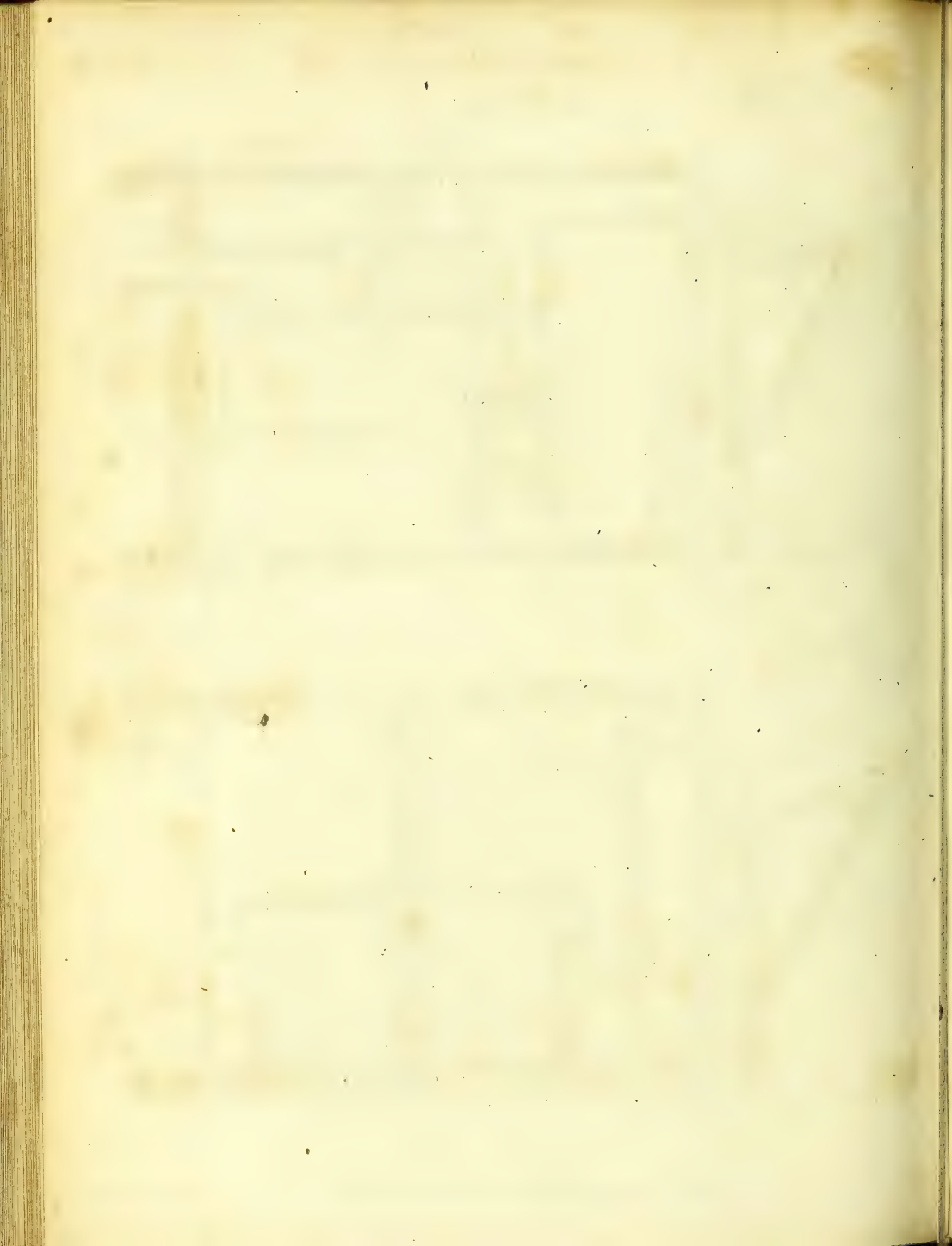
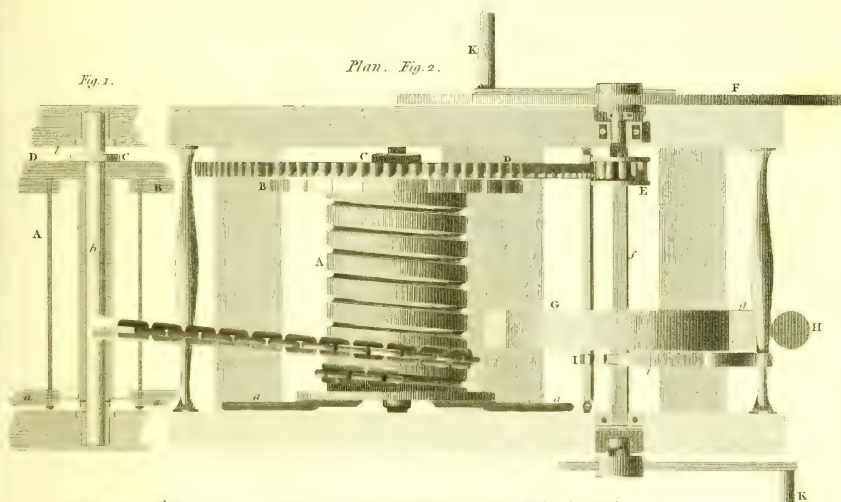


Fig. 3.

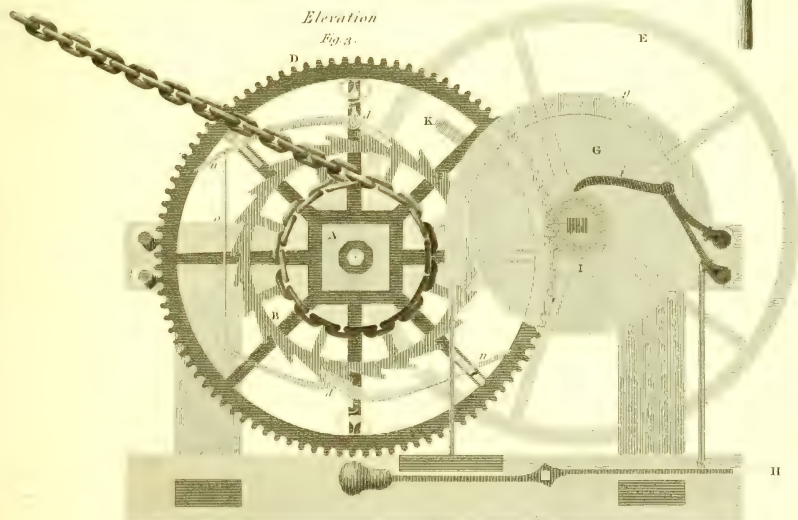




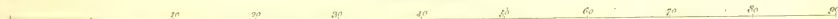
CRANES.



M^r SMEATON'S design for a CRANE, for the Wool Quay, Custom House, London, 1789.



Scale of Inches.



Reduced by permission, from the Original Drawing in the possession of Sir Joseph Banks B. B. by J. Barry-Junior.



CRANES.

PLATE XX.

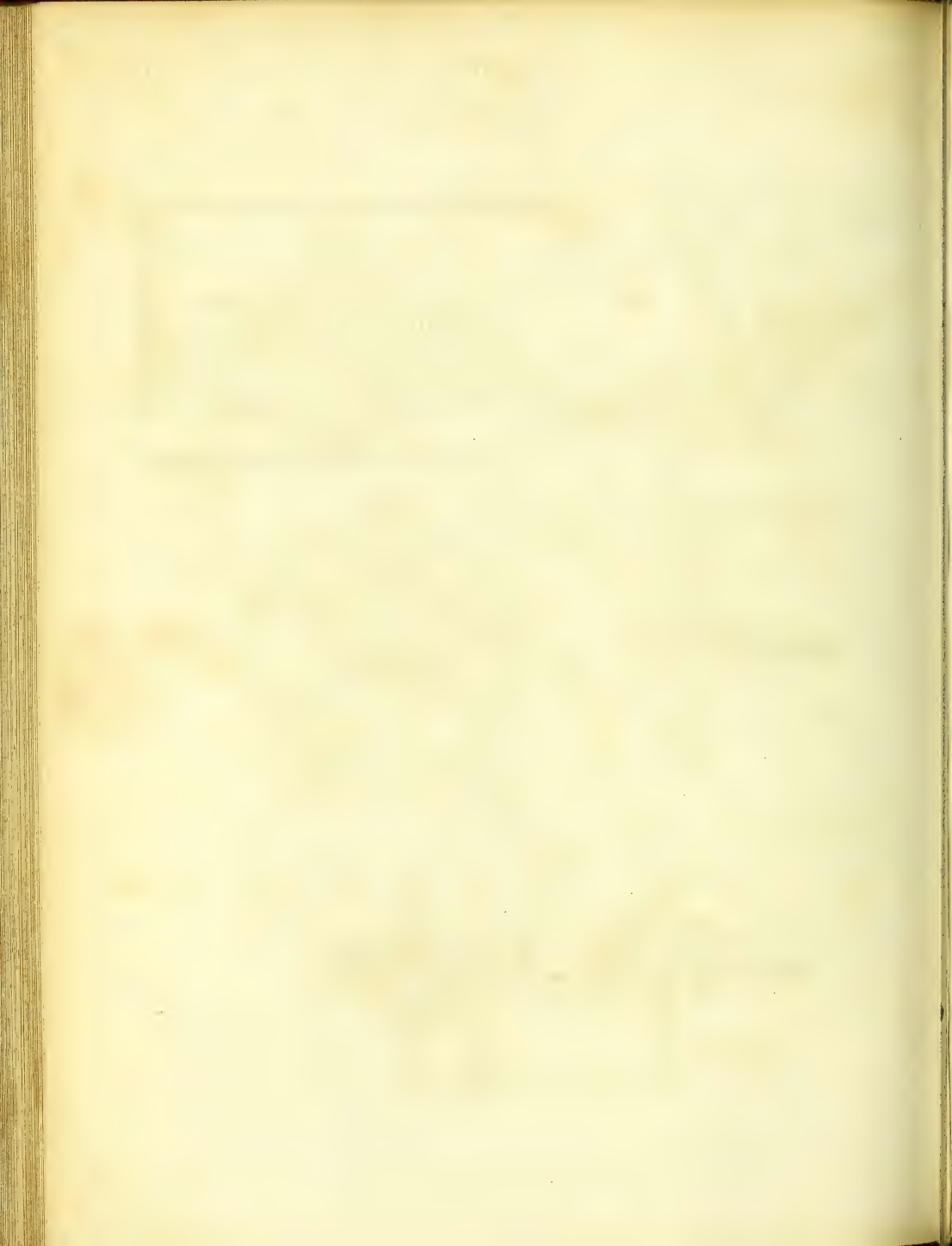


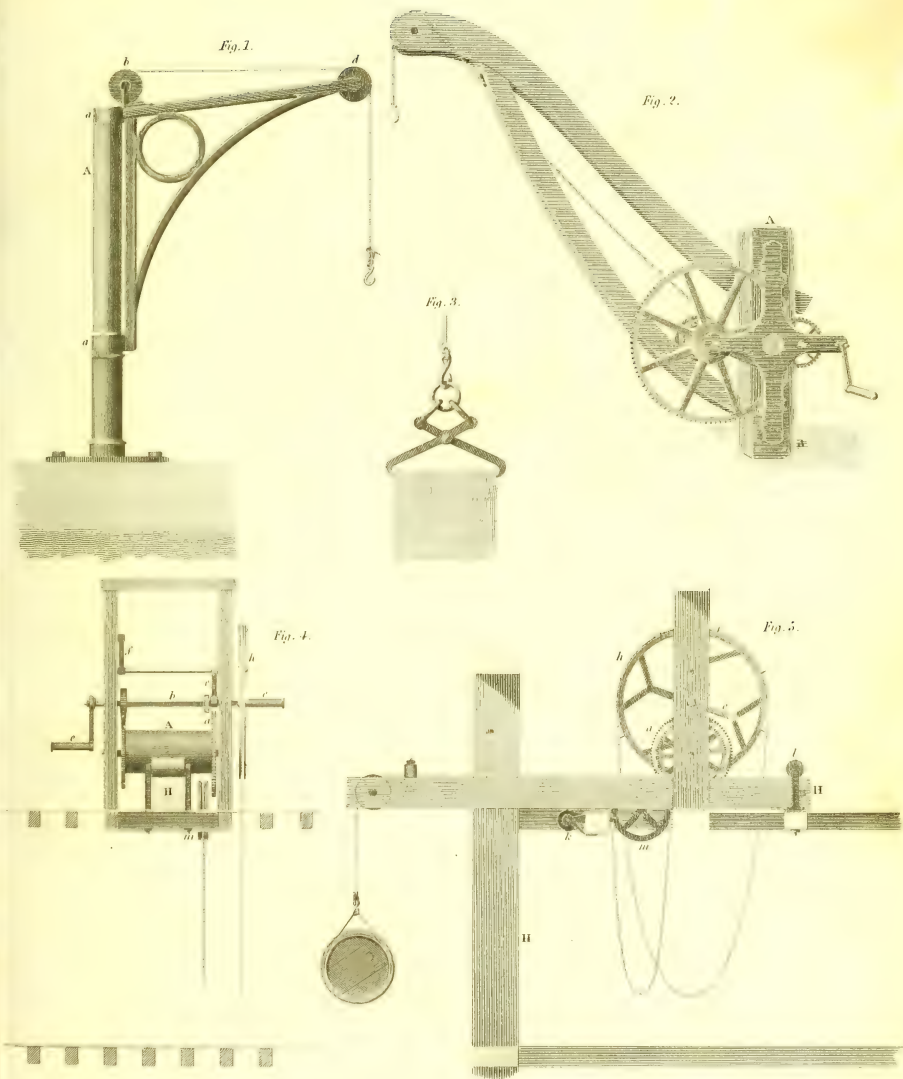
M^r. WHITE'S
Crane.

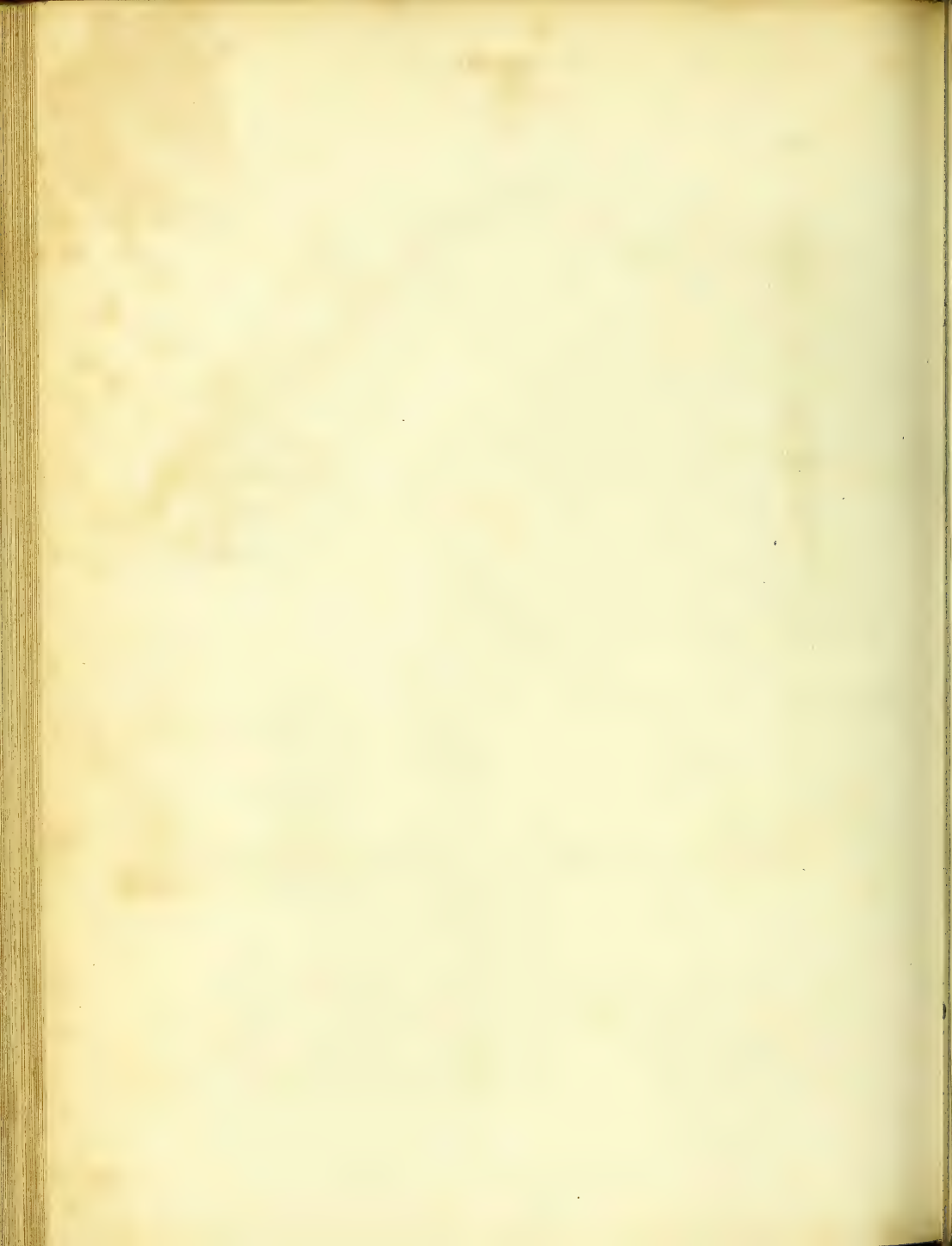


MR. BRAITHWAITE'S
Crane.









DIRECTION of Motion.

Fig. 3.



Fig. 6.

Direction line of

Fig. 5.

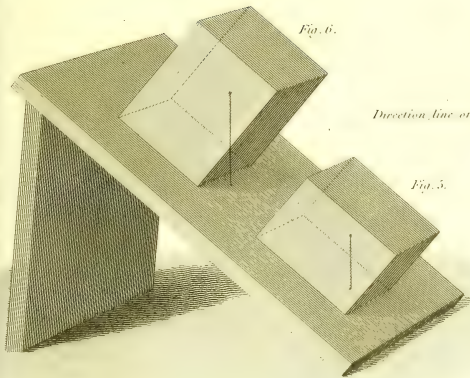
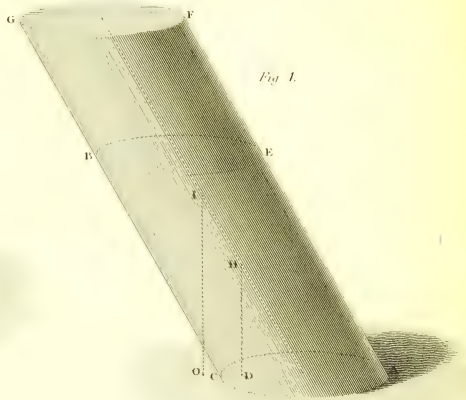


Fig. 1.



M' Hill's Machine for DRAWING out Ships Bolts.

Fig. 1.

Section



Fig. 2.

Elevation.

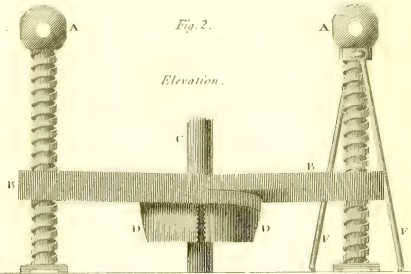


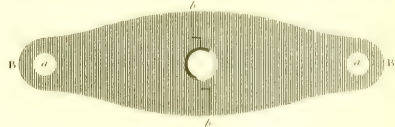
Fig. 3.



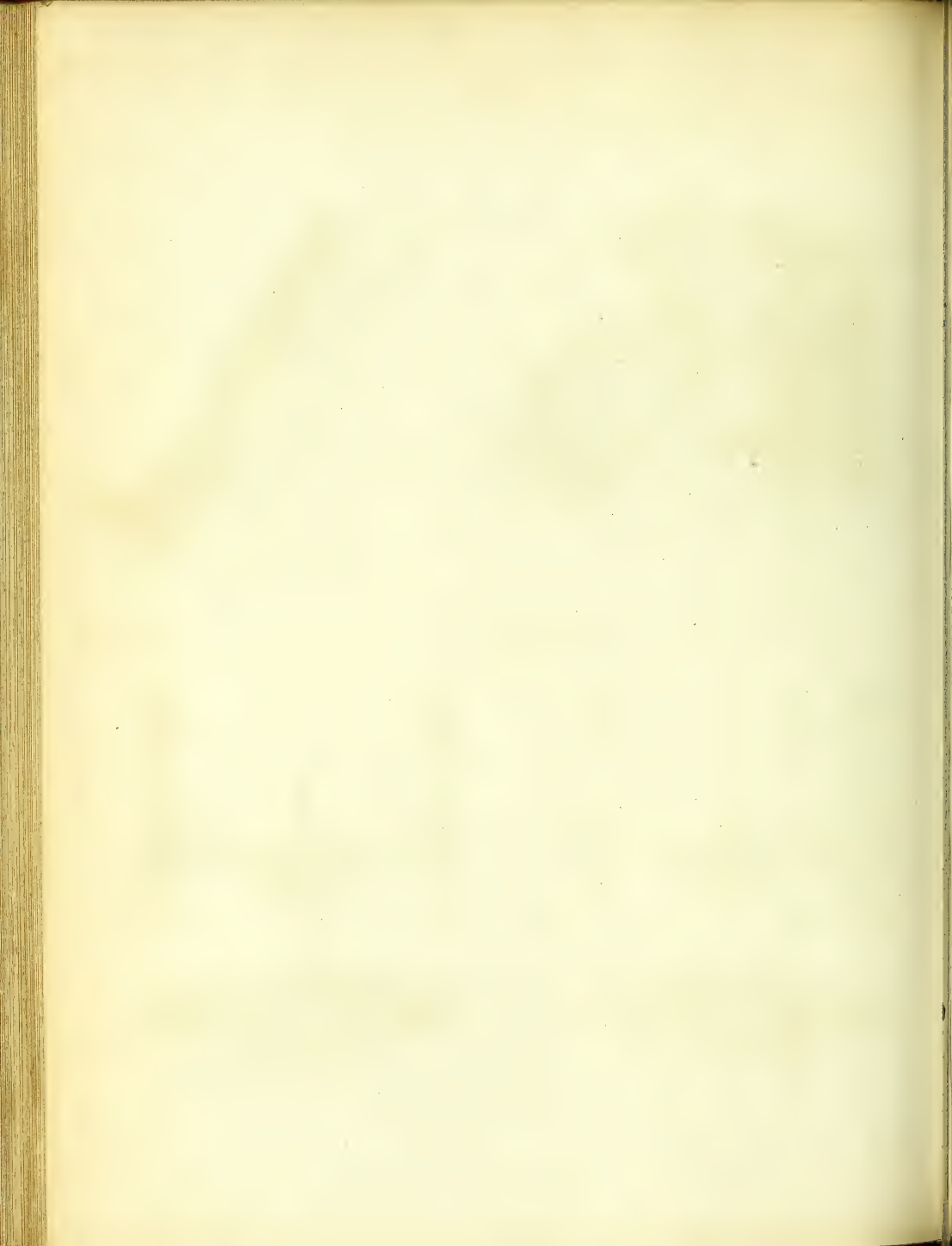
Plan of the lower Side.

Fig. 4.

Plan



Plan of the upper Side.



Elevation.

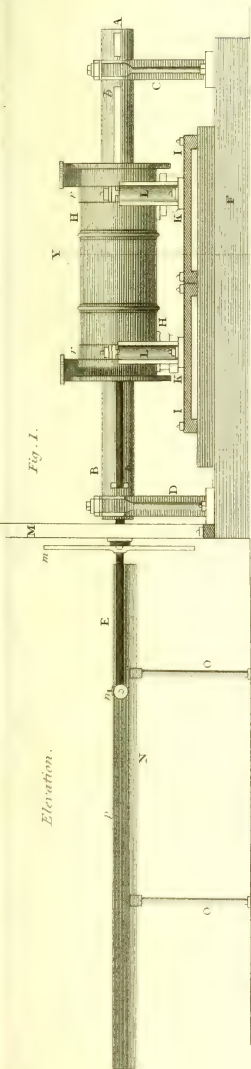


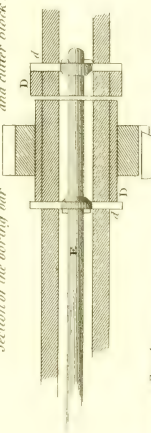
Fig. 1.

Plan



Fig. 2.

Fig. 3. Section of the boring bar and cutter block.



End Elevation.

Z



Fig. 6.

Section through YZ.

Fig. 7.

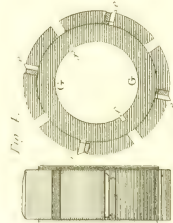
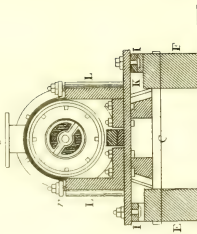
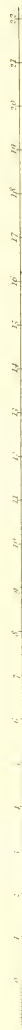


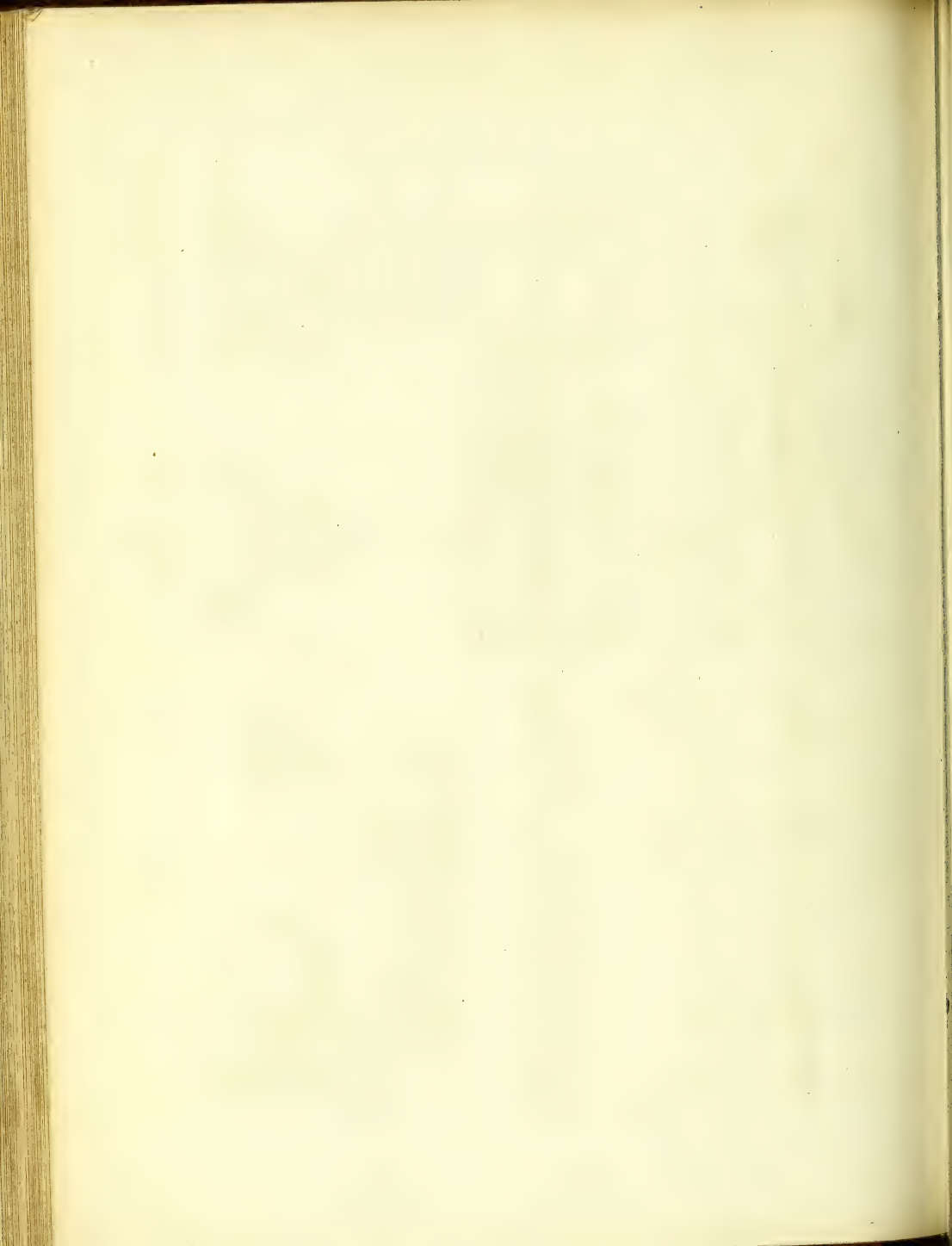
Fig. 4.



Fig. 5.

Scale of Feet.





DRILLS.

Fig. 1.



Fig. 2.



Fig. 3.



Fig. 4.



Fig. 5.



Fig. 6.



Fig. 7.

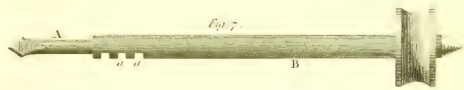
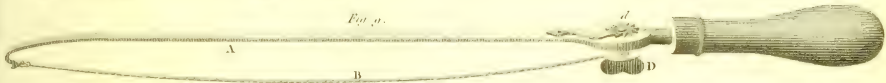


Fig. 8.



Fig. 9.



DRILLING MACHINES.

Fig. 10.

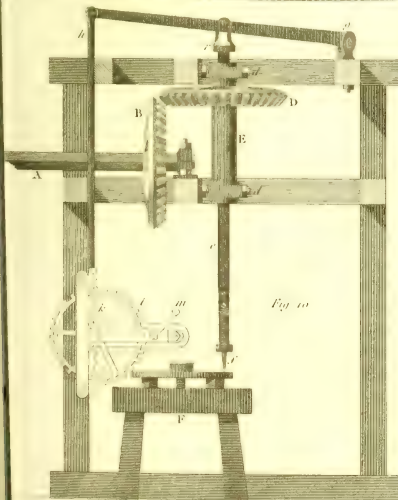
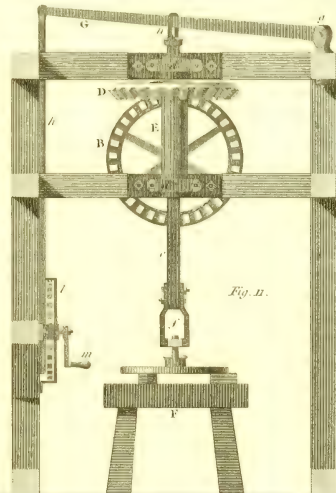


Fig. 11.



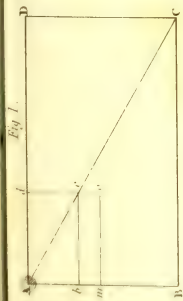


Fig. 1.

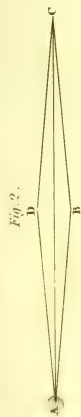


Fig. 2.

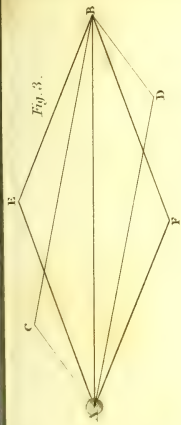


Fig. 3.

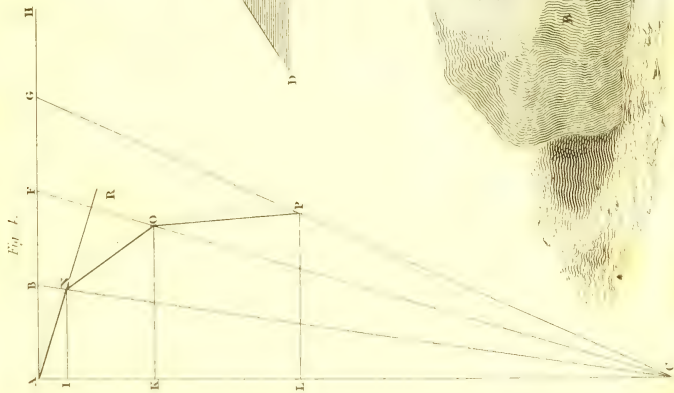


Fig. 4.

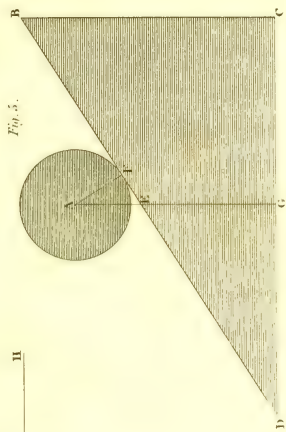


Fig. 5.

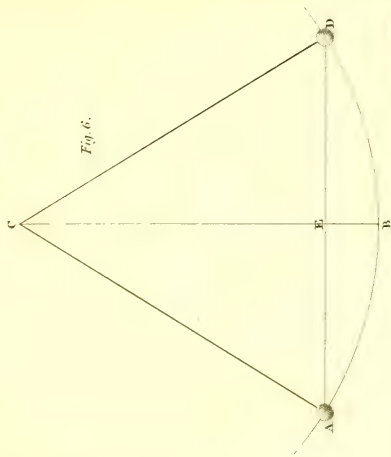
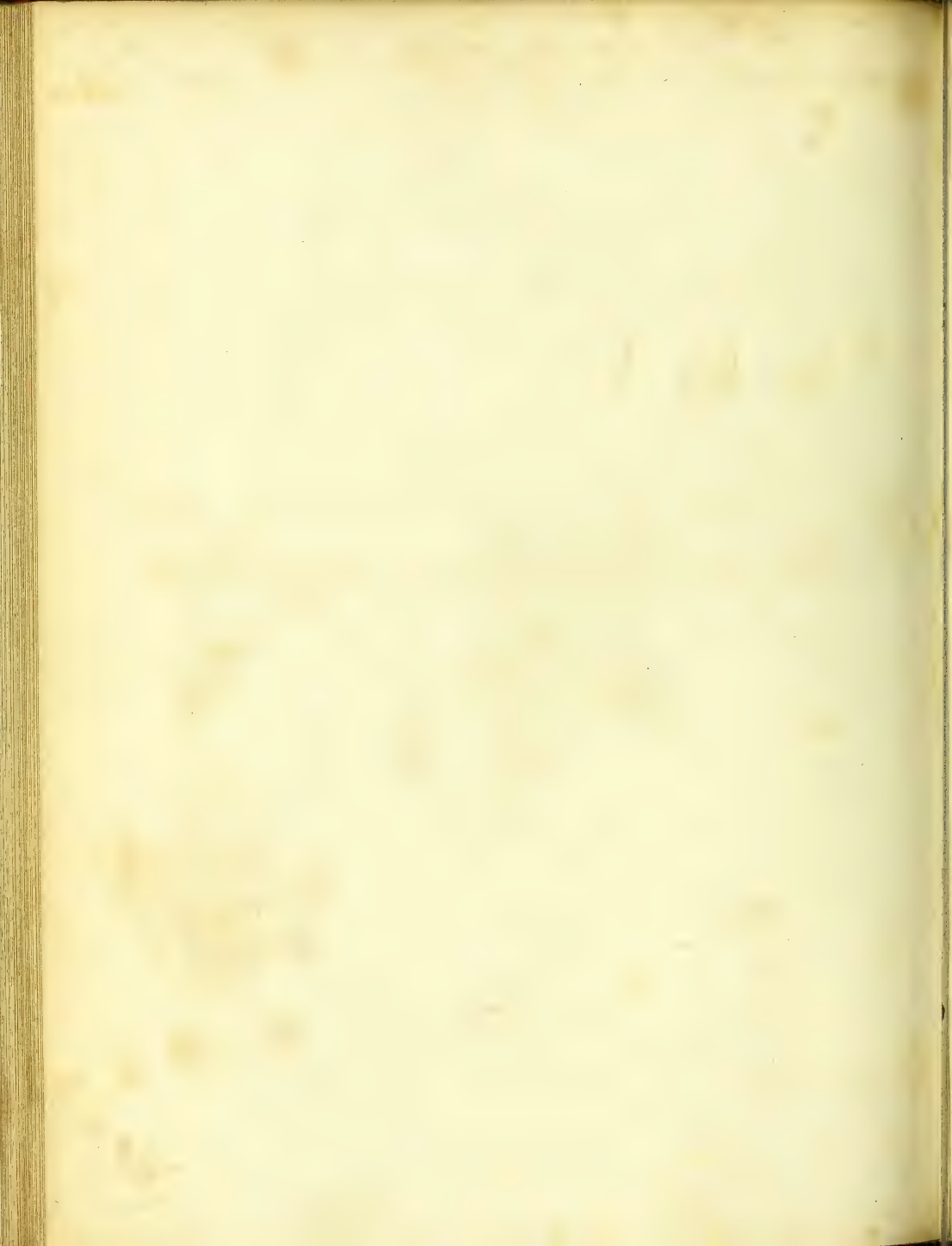


Fig. 6.



Fig. 7.



MECHANICS.

DYNAMOMETERS

PLATE XXVI.

FOR MEASURING THE FORCE OF DRAUGHT.

M^r M^s Dougales.

Fig. 1.

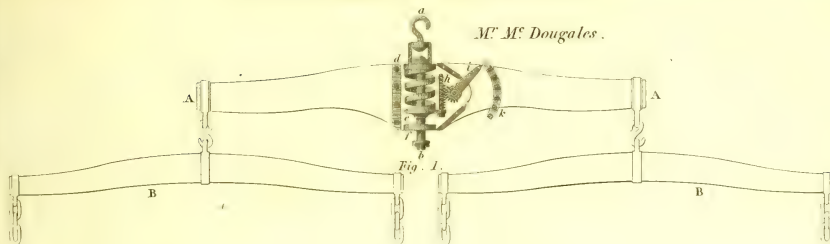


Fig. 3.

M^r Salmons' contrivance for determining the force required to work a Mill.

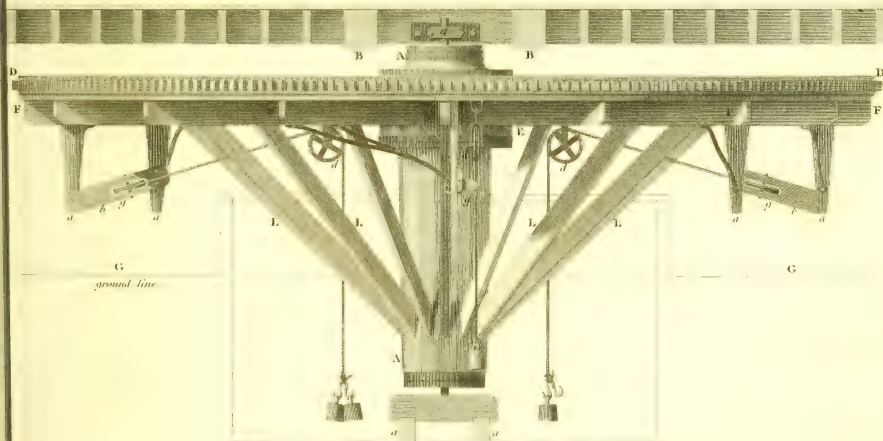
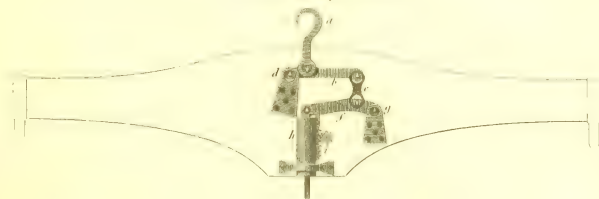
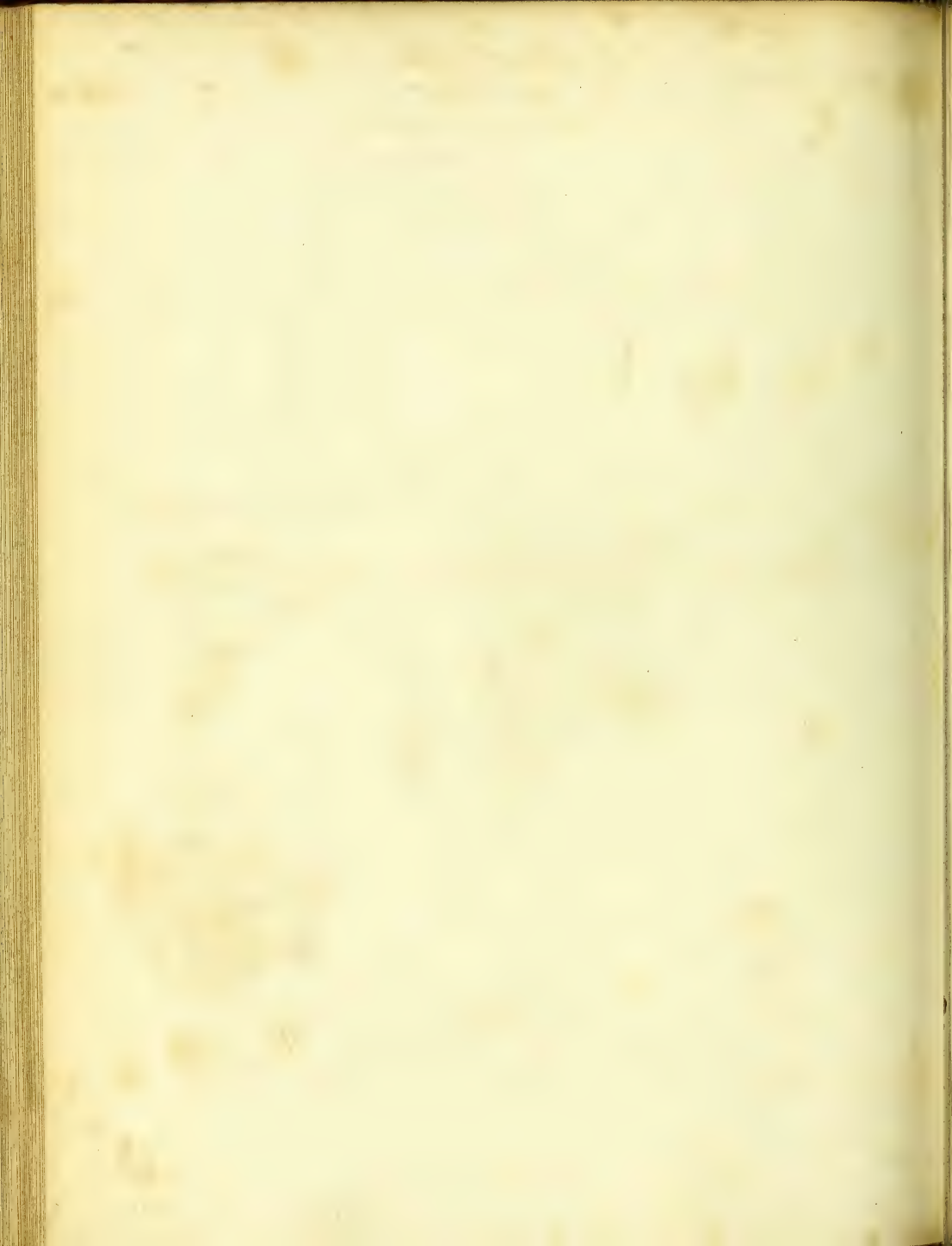


Fig. 2.

M^r Salmons' Dynamometer.





MECHANICS.

DYNAMOMETERS

PLATE XVI.

FOR MEASURING THE FORCE OF DRAUGHT.

M^r M^r Douglass.

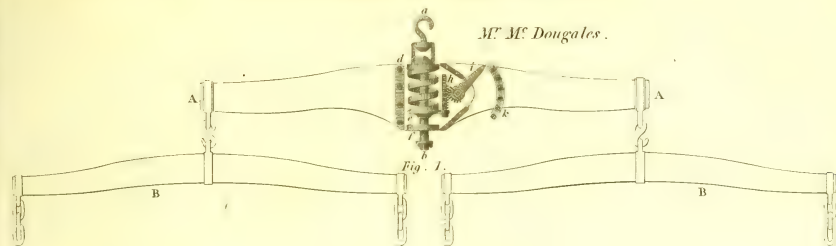


Fig. 3.

M^r Salmons contrivance for determining the force required to work a Mill.

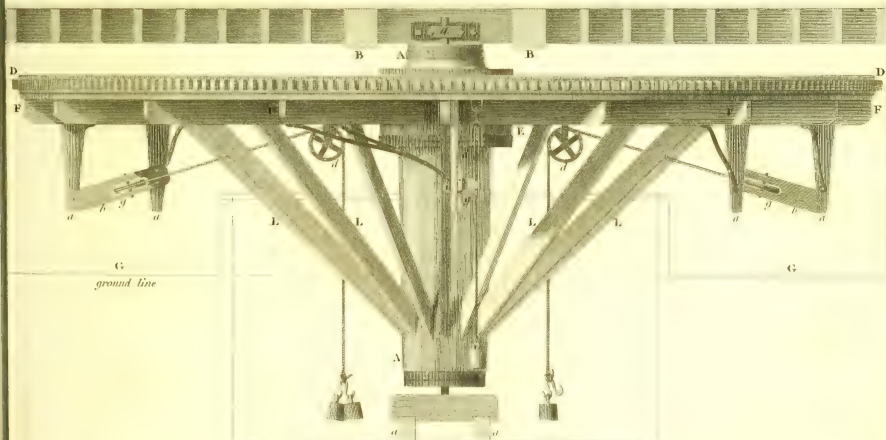
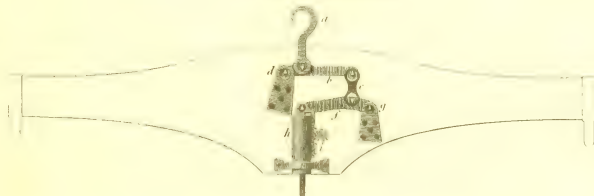
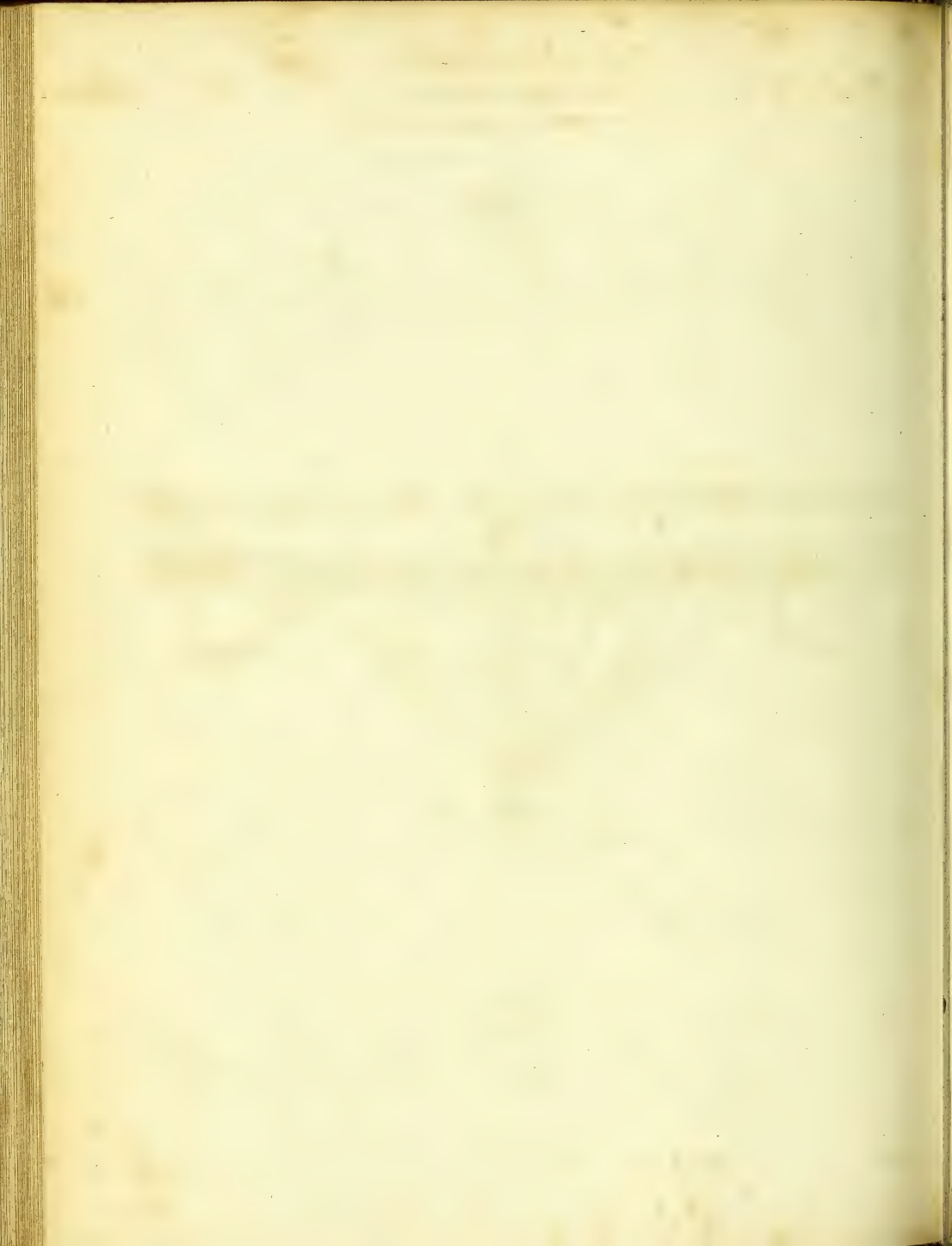


Fig. 2.

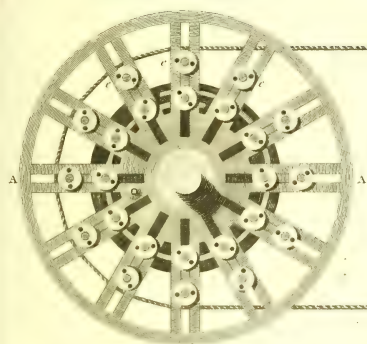
M^r Salmons Dynamometer.





EXPANDING RIGGERS.

Fig. 5.



McA Flute.

Fig. 6.

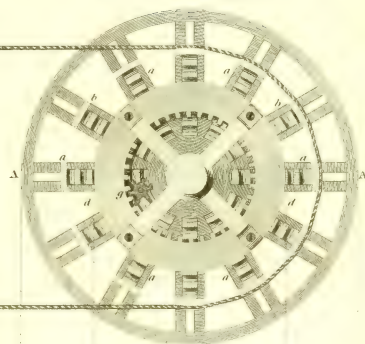


Fig. 10.

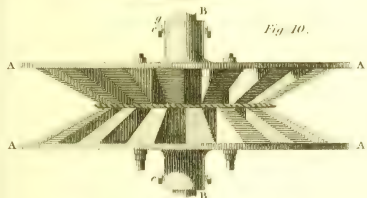


Fig. 7.

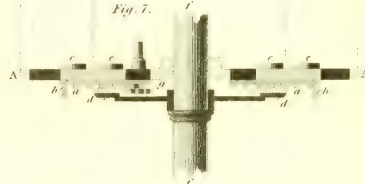


Fig. 11. *McFarley's.*

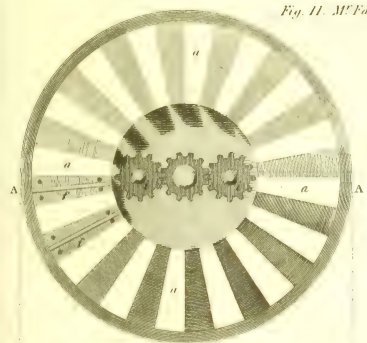


Fig. 8.

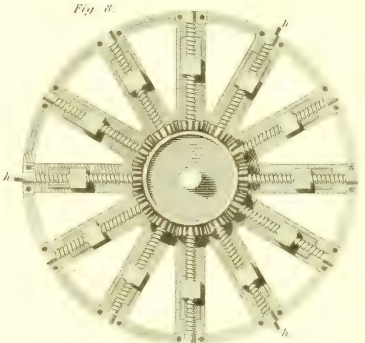


Fig. 12.

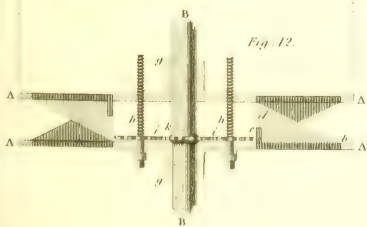
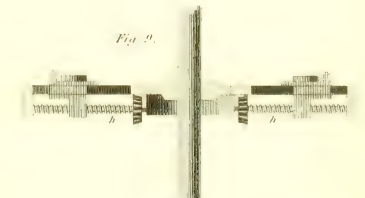
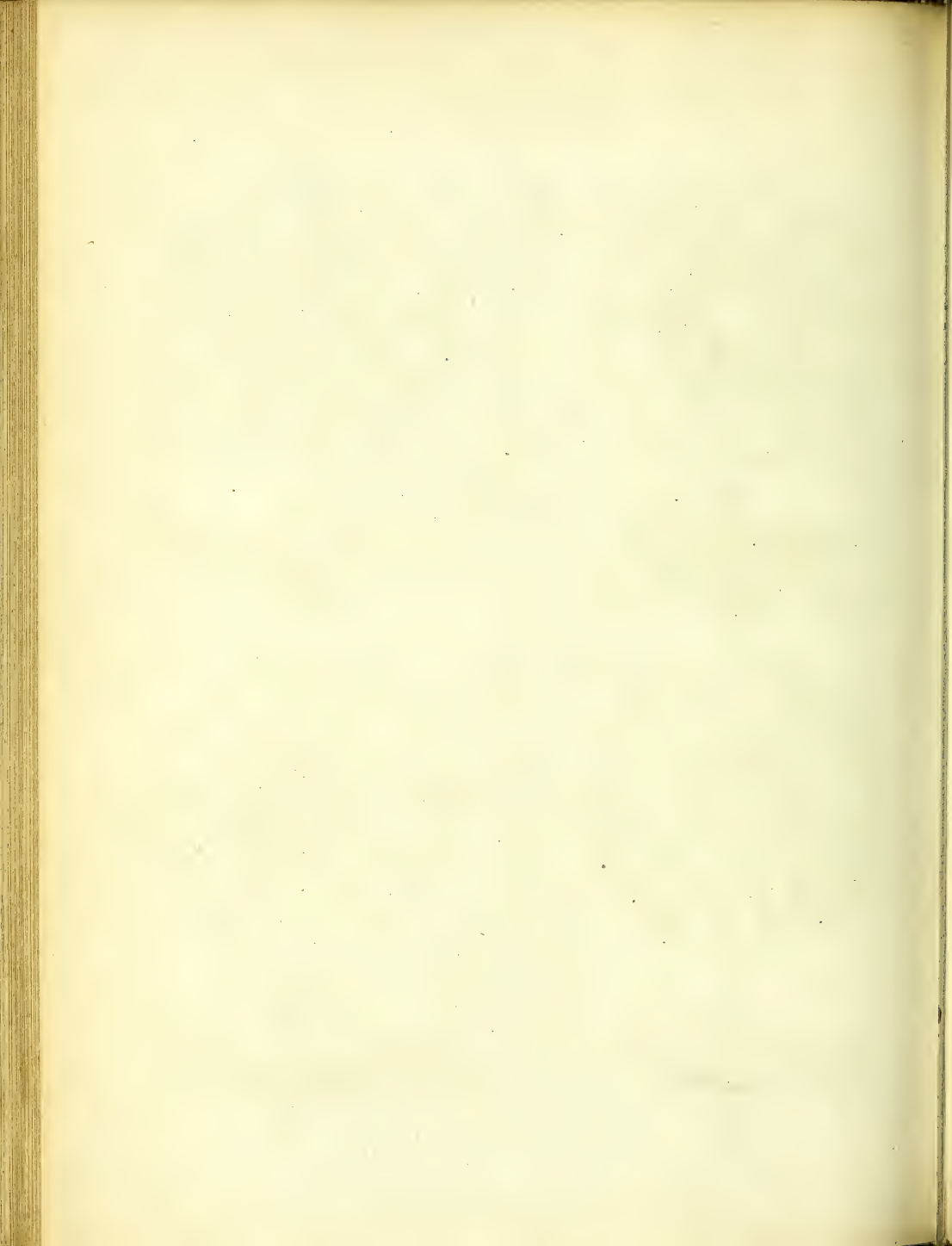


Fig. 9.





MECHANICS. FLY-PRESS.

PLATE XXVII.

Fig. 1.

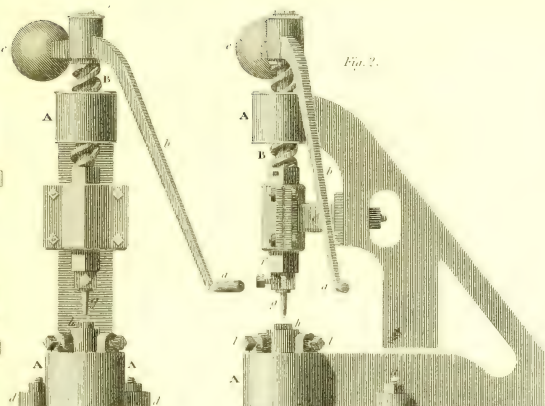


Fig. 2.



Fig. 3.



Fig. 4.

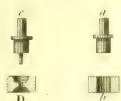


Fig. 5.

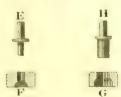


Fig. 6.



Foot 1 2 3 4 5 6 7 8 9 10 11 12 Inches

Fig. 7.

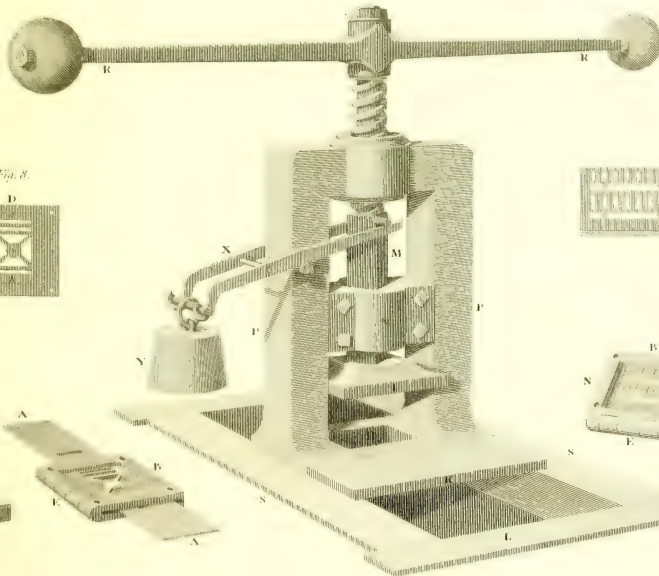


Fig. 8.

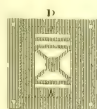
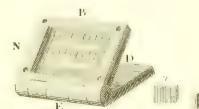
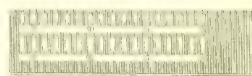
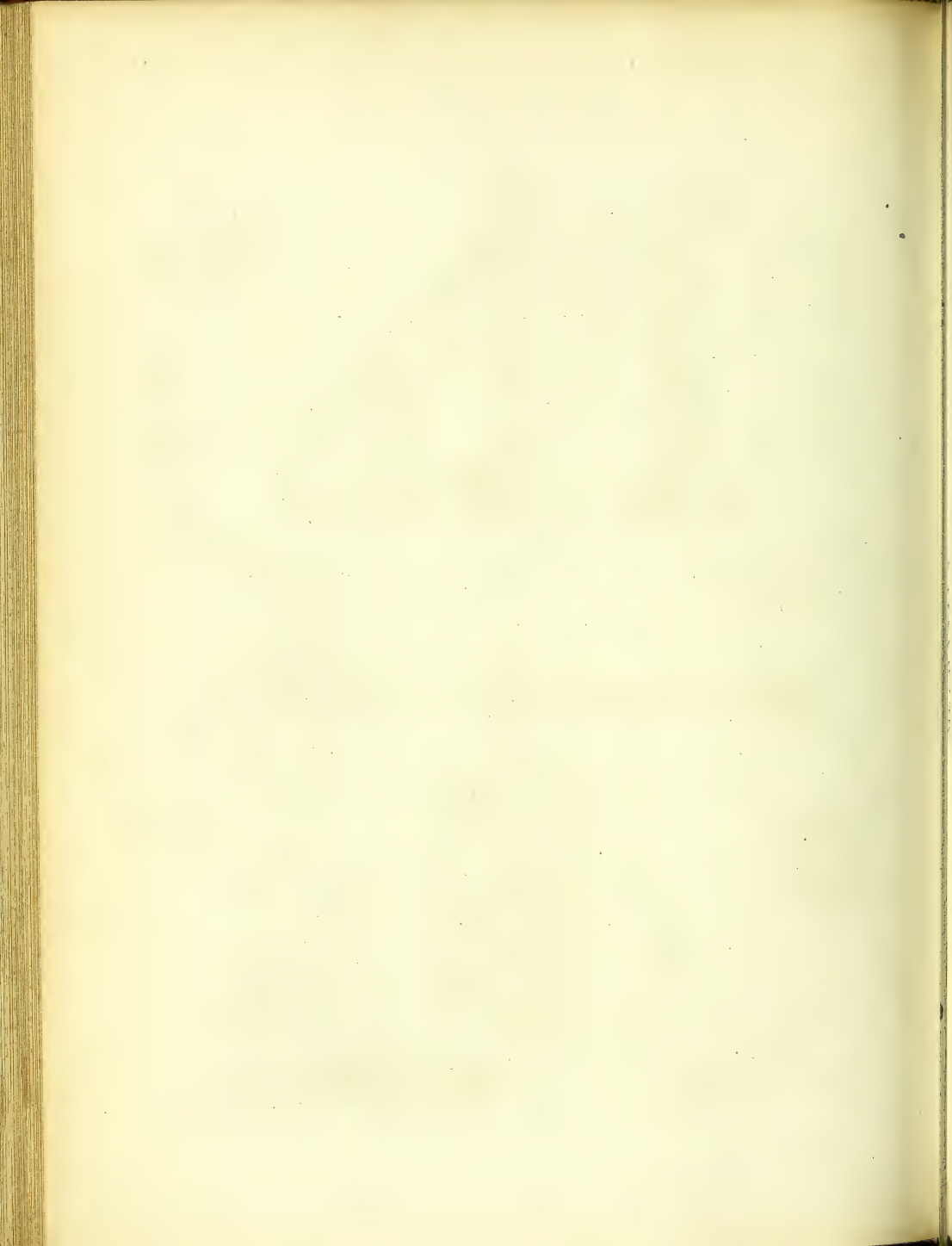
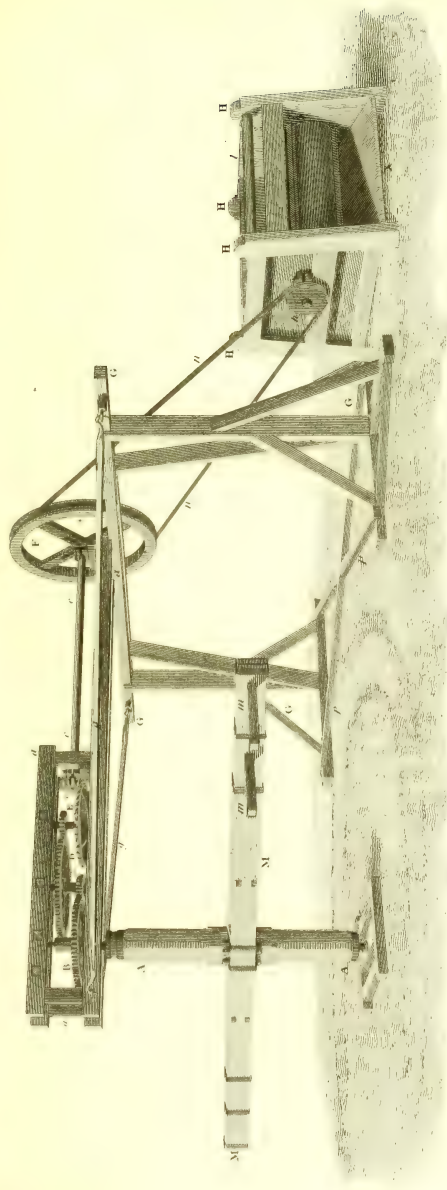


Fig. 9.

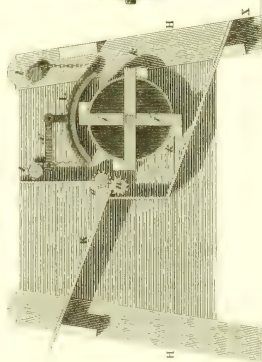




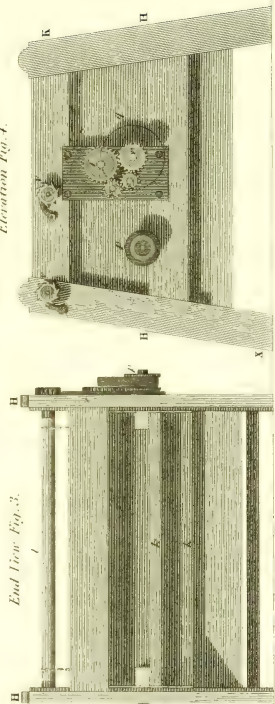
Perspective View Fig. 1.



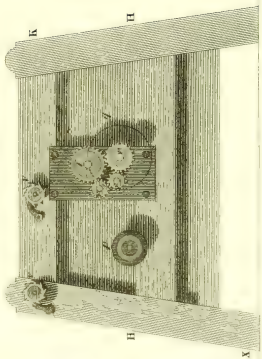
Section Fig. 2.

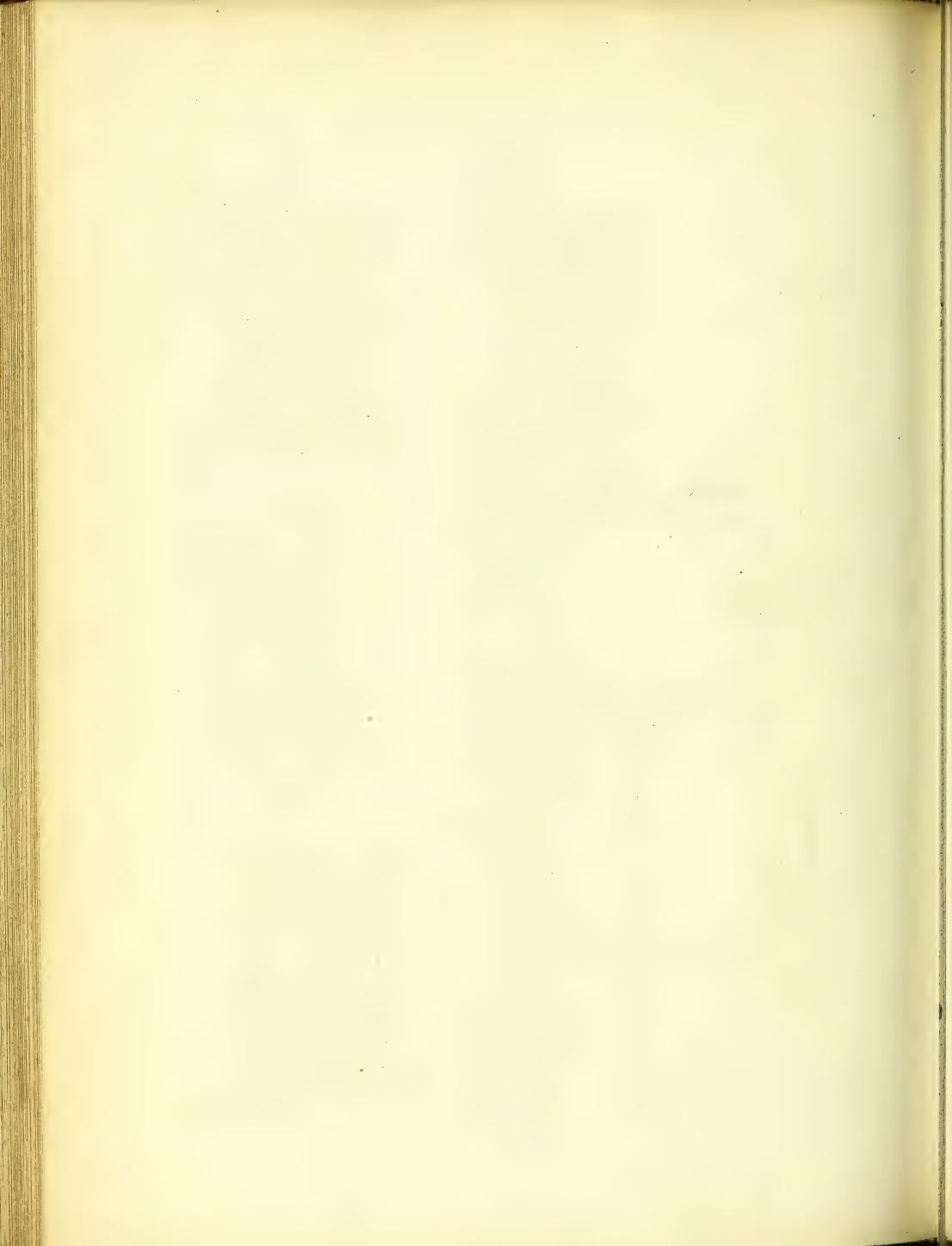


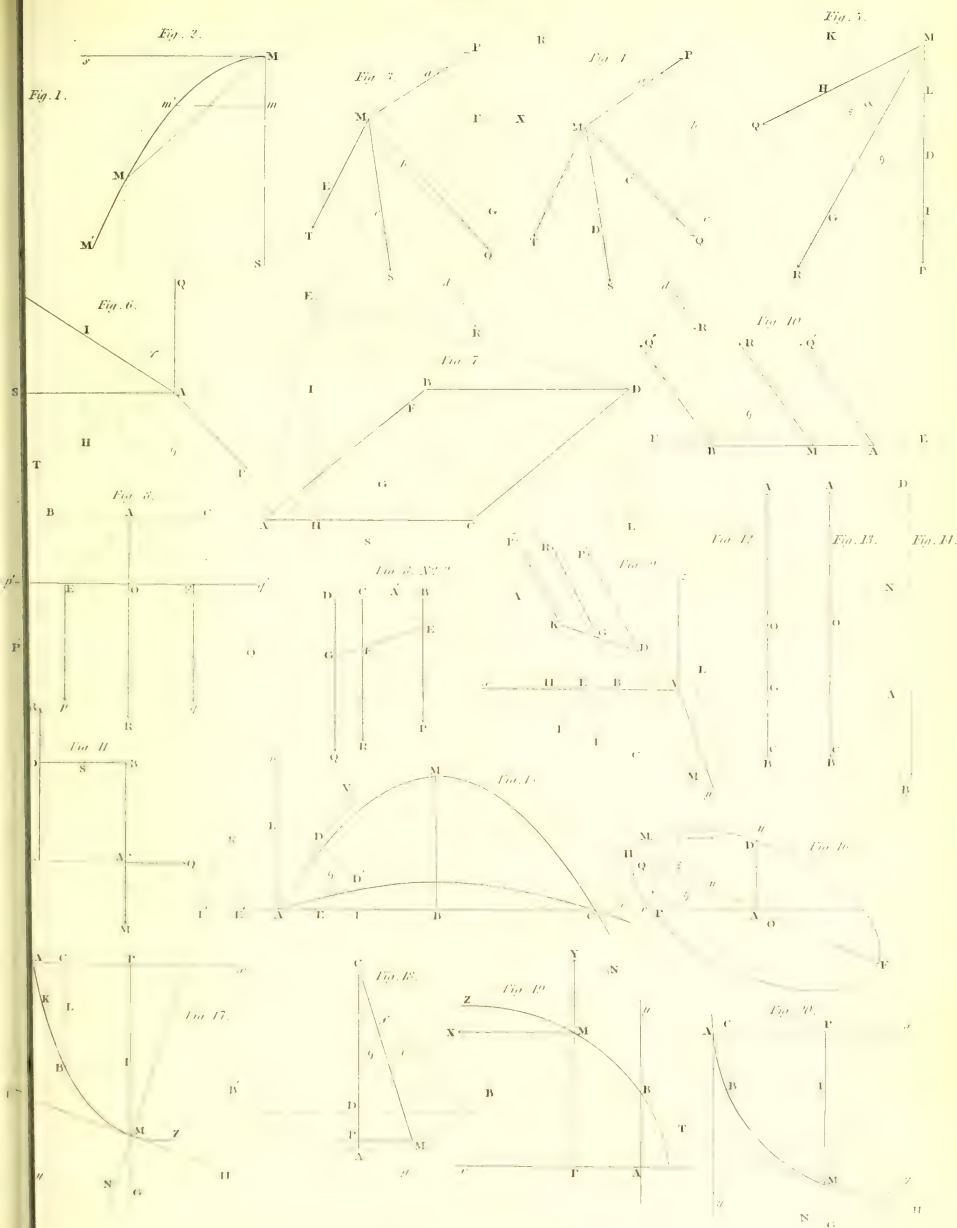
End View Fig. 3.

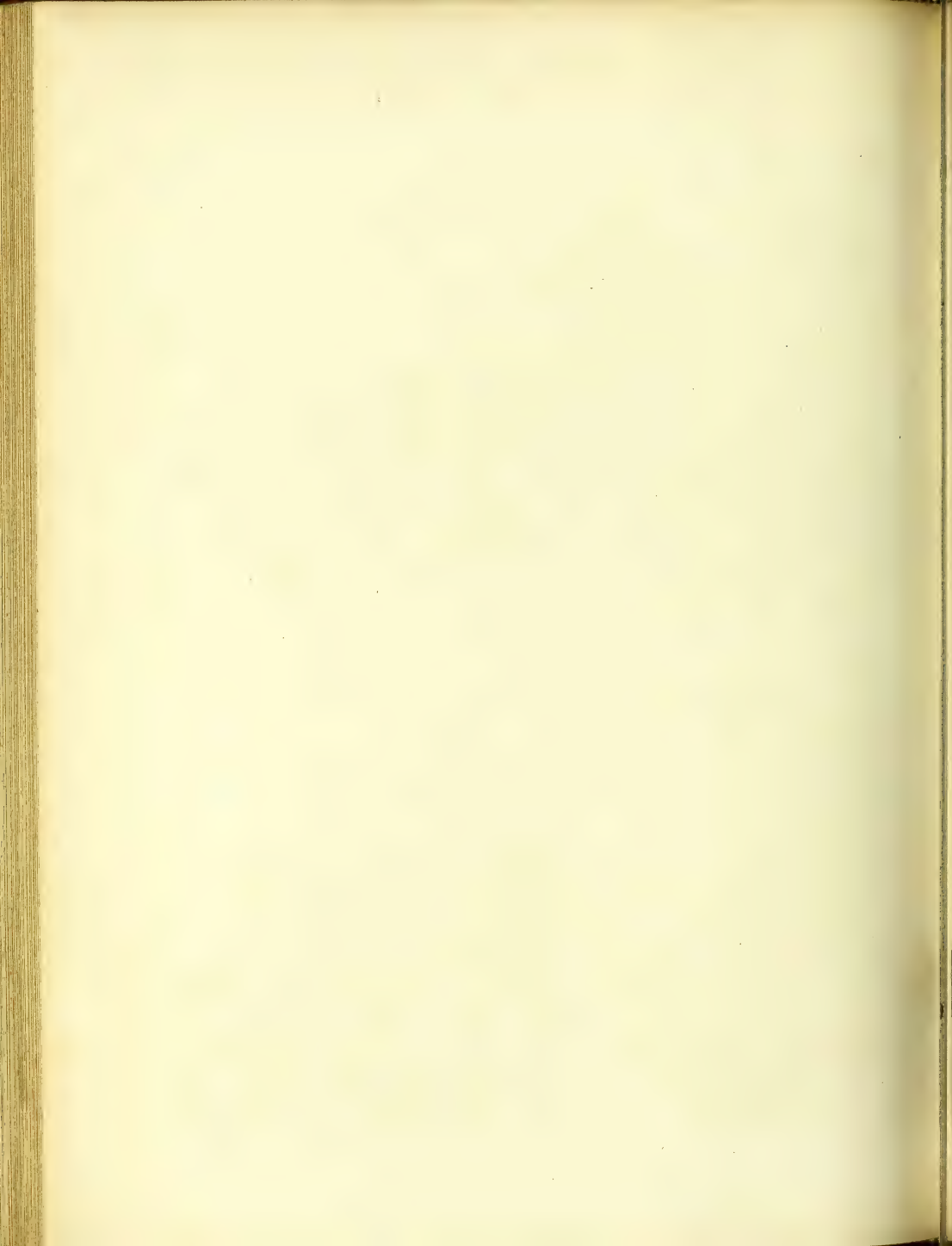


Elevation Fig. 4.









FRICTION AND FULLING MILL.

Fig. 3.

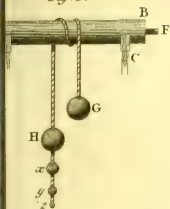


Fig. 2.

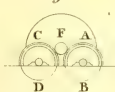
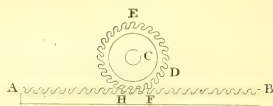
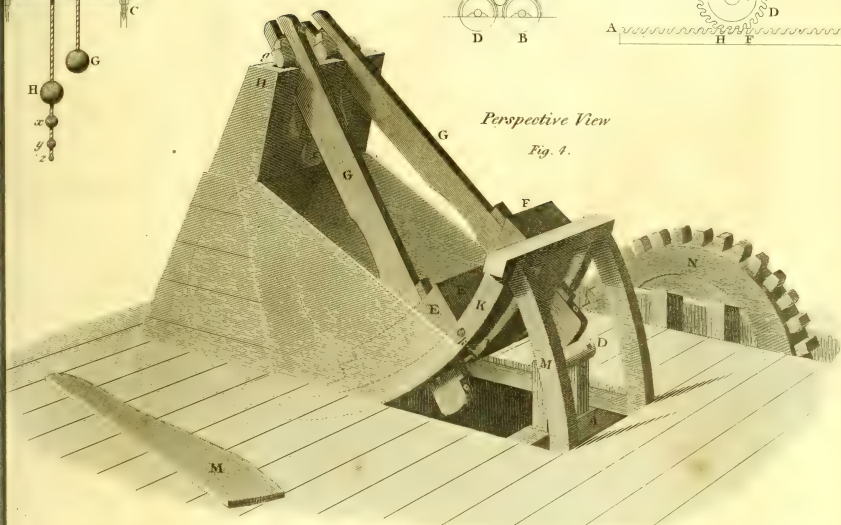


Fig. 1.



Perspective View

Fig. 4.



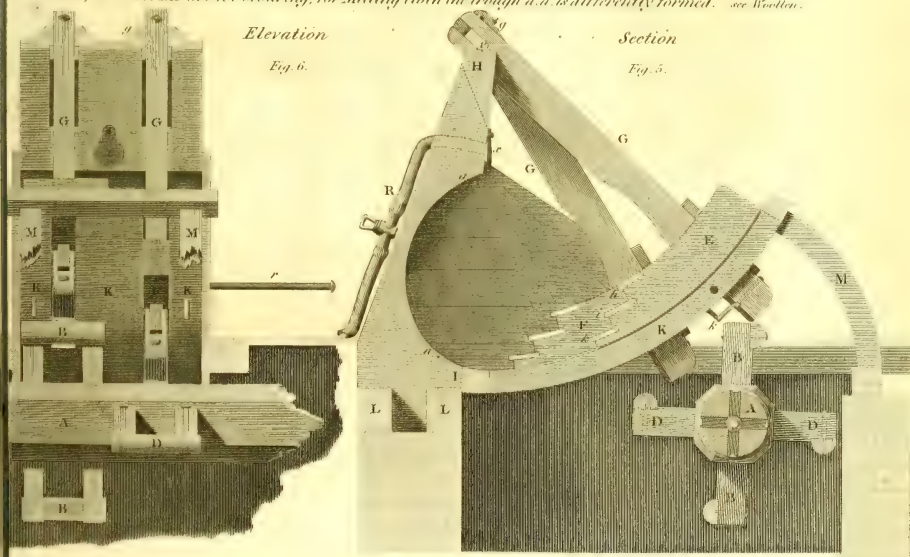
Note, these Stocks are for Scouring; for Milling cloth the trough a. is differently formed. see Wooden.

Elevation

Fig. 6.

Section

Fig. 5.



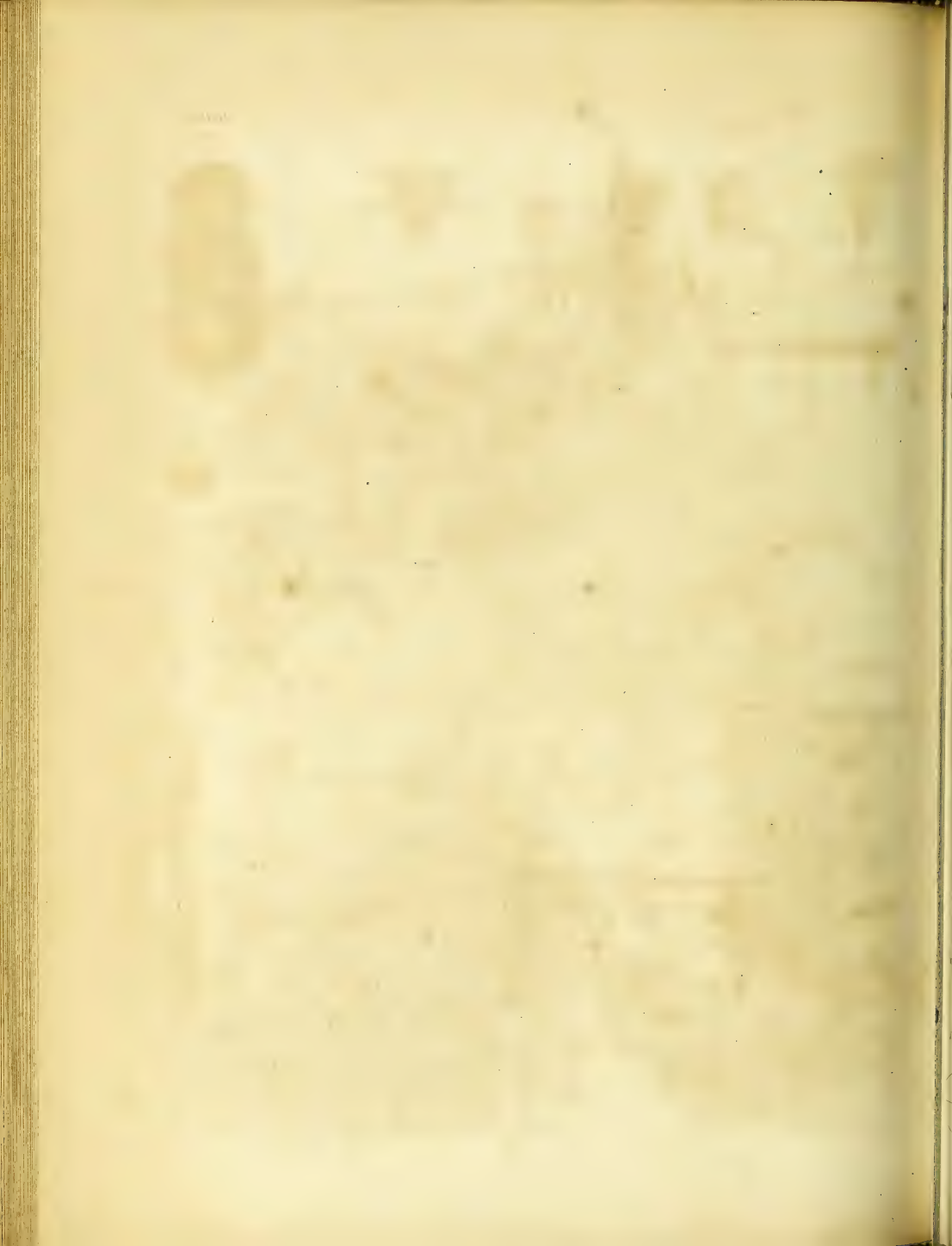
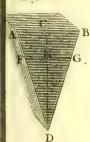


Fig. 1.



WEDGE.

Fig. 2.



Fig. 3.

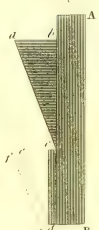


Fig. 4.

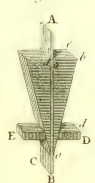
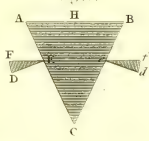
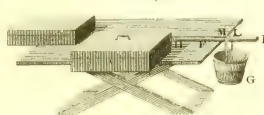


Fig. 5.



WEIGHT.

Fig. 6.



WHEEL.

Fig. 8.

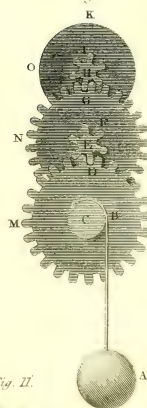


Fig. 7.



Fig. 9.

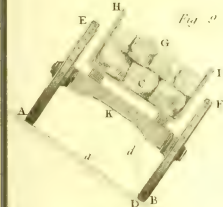


Fig. 10.

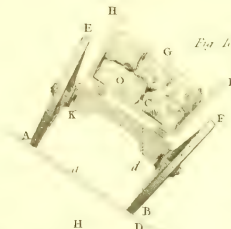


Fig. 11.

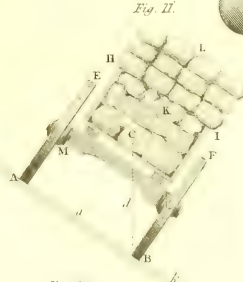


PLATE XXXVII.

Fig. 12.

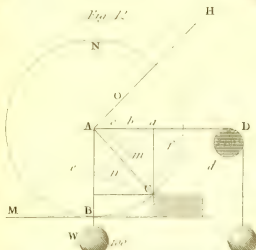


PLATE XXXVII.

Fig. 13.

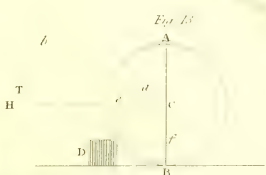
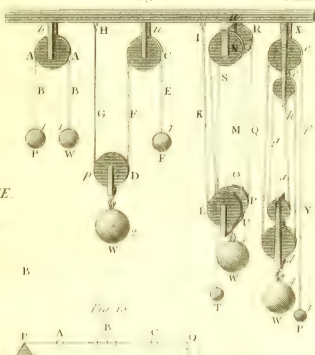


Fig. 14.



REFRACTION

Fig. 24.

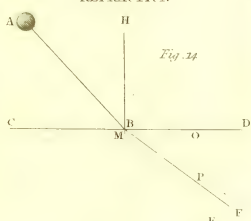
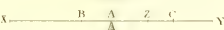
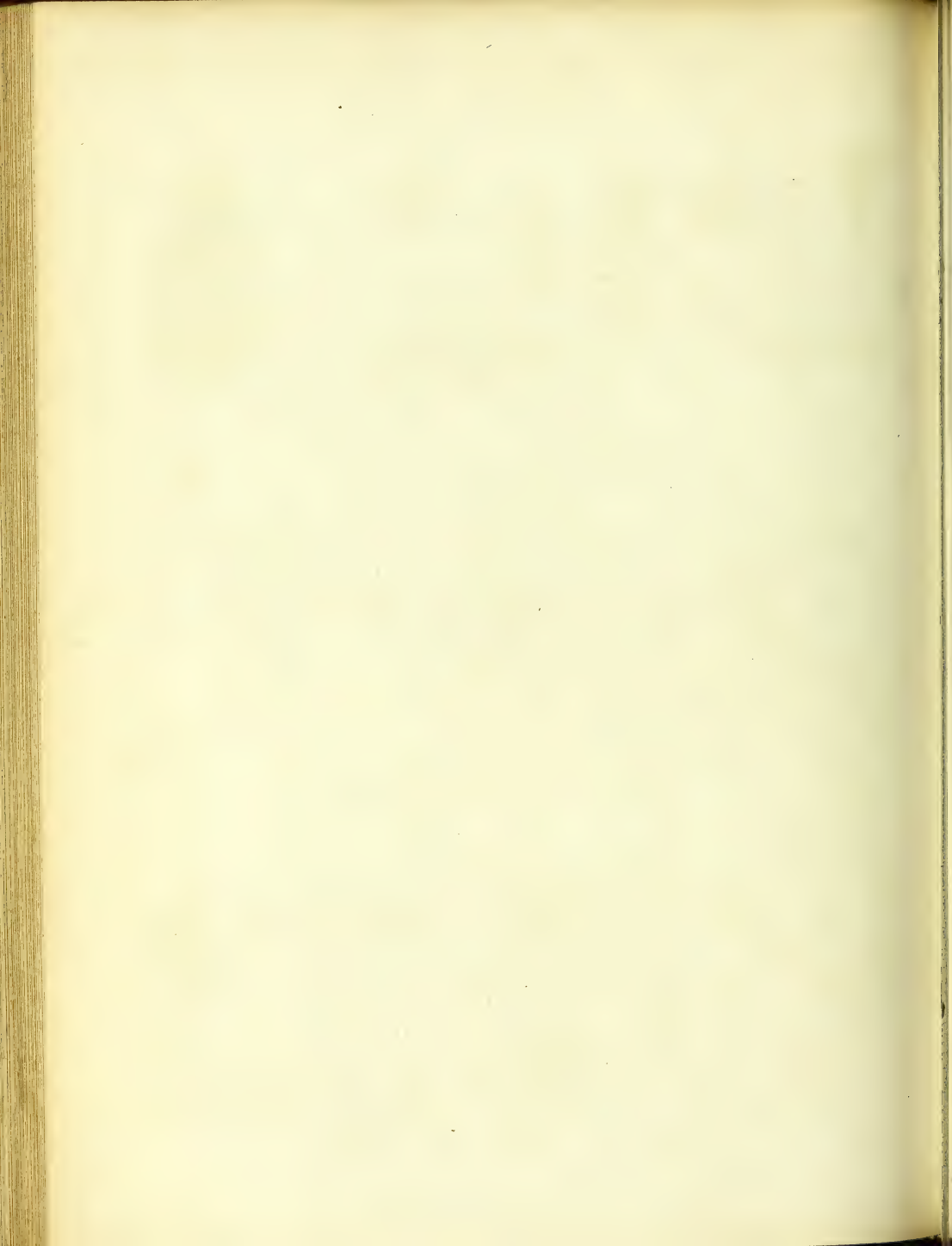
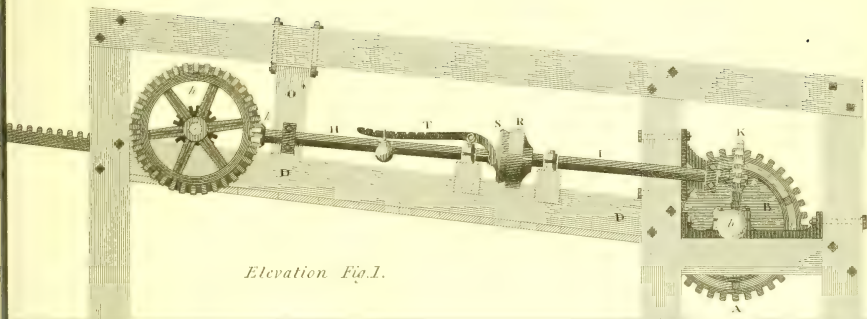


Fig. 25.



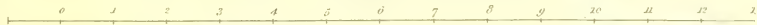


LOG-WOOD MILL.



Elevation Fig. 1.

Scale of Feet.



Plan, Fig. 2.

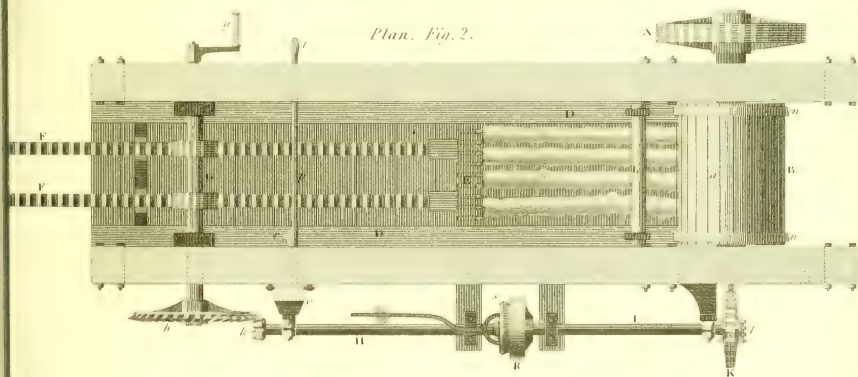


Fig. 1.

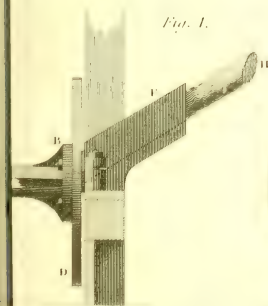


Fig. 3.

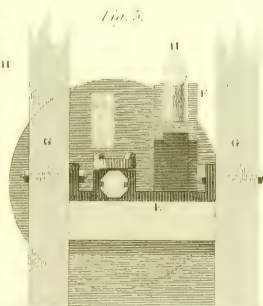
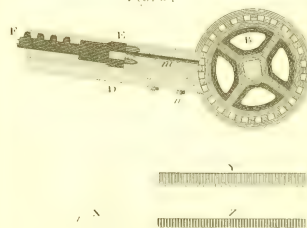


Fig. 5.



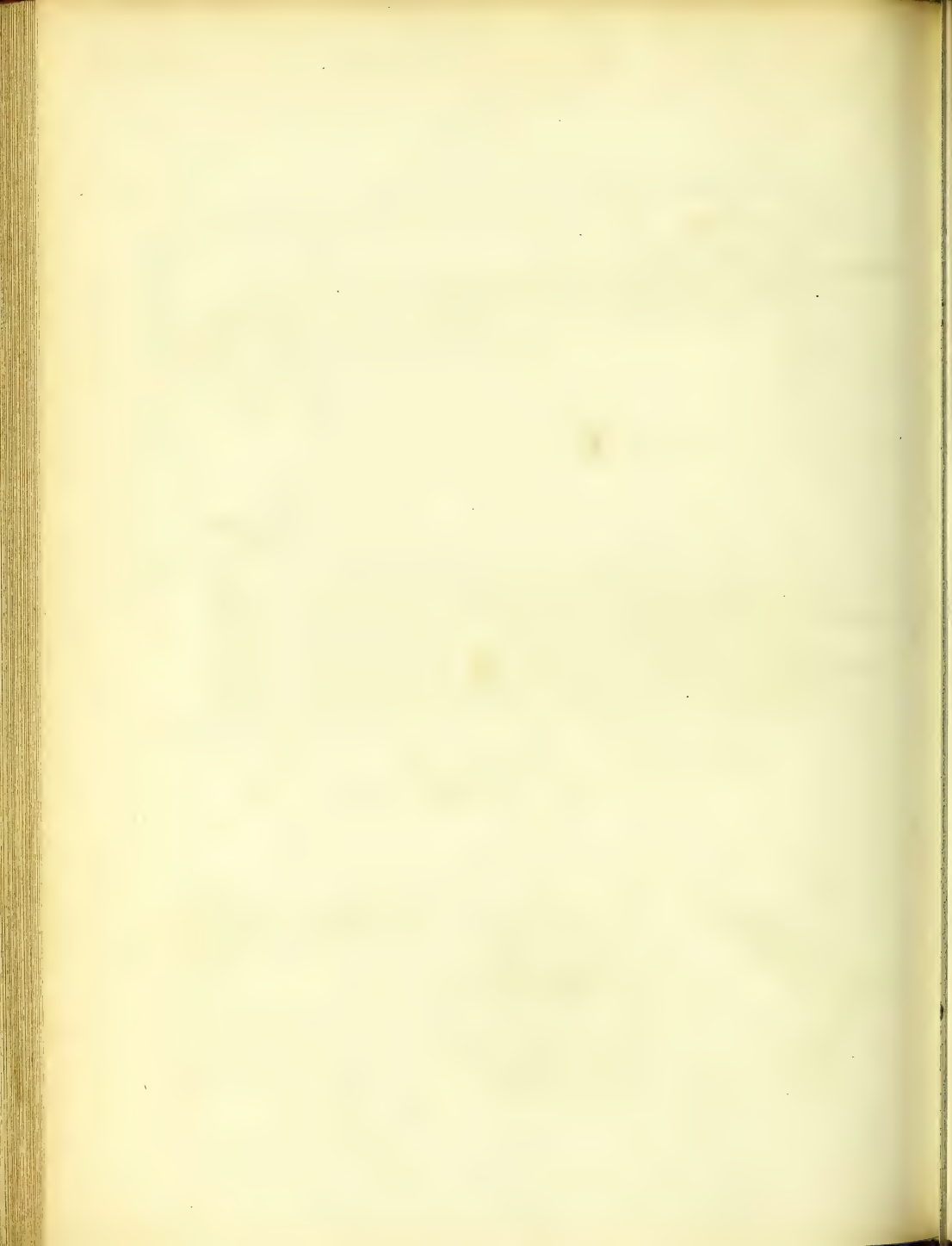


Fig. 3.

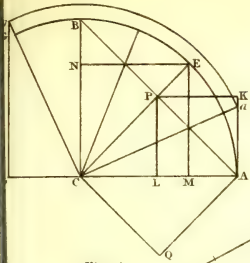


Fig. 2.

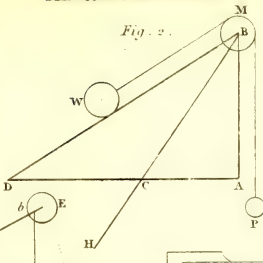


Fig. 1.

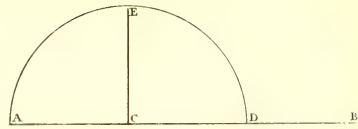


Fig. 6.

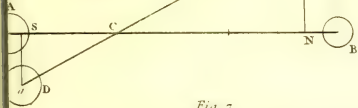


Fig. 7.



Fig. 8.

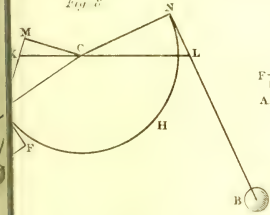


Fig. 9.



Fig. 10.

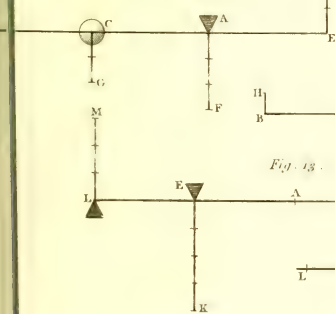


Fig. 11.

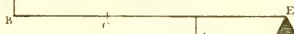


Fig. 13.

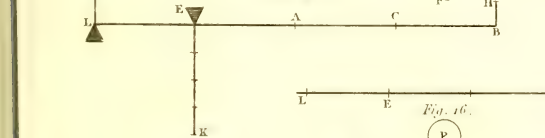


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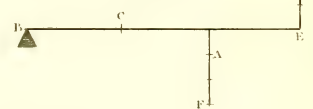


Fig. 14.



Fig. 16.

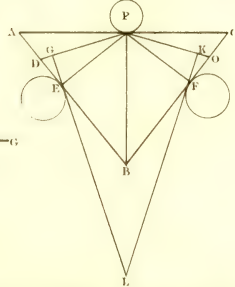


Fig. 17.

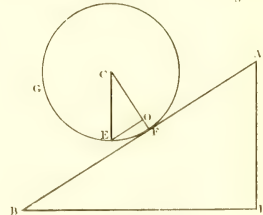
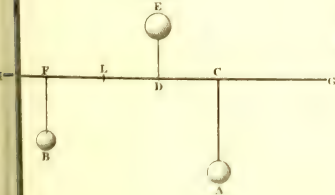


Fig. 15.



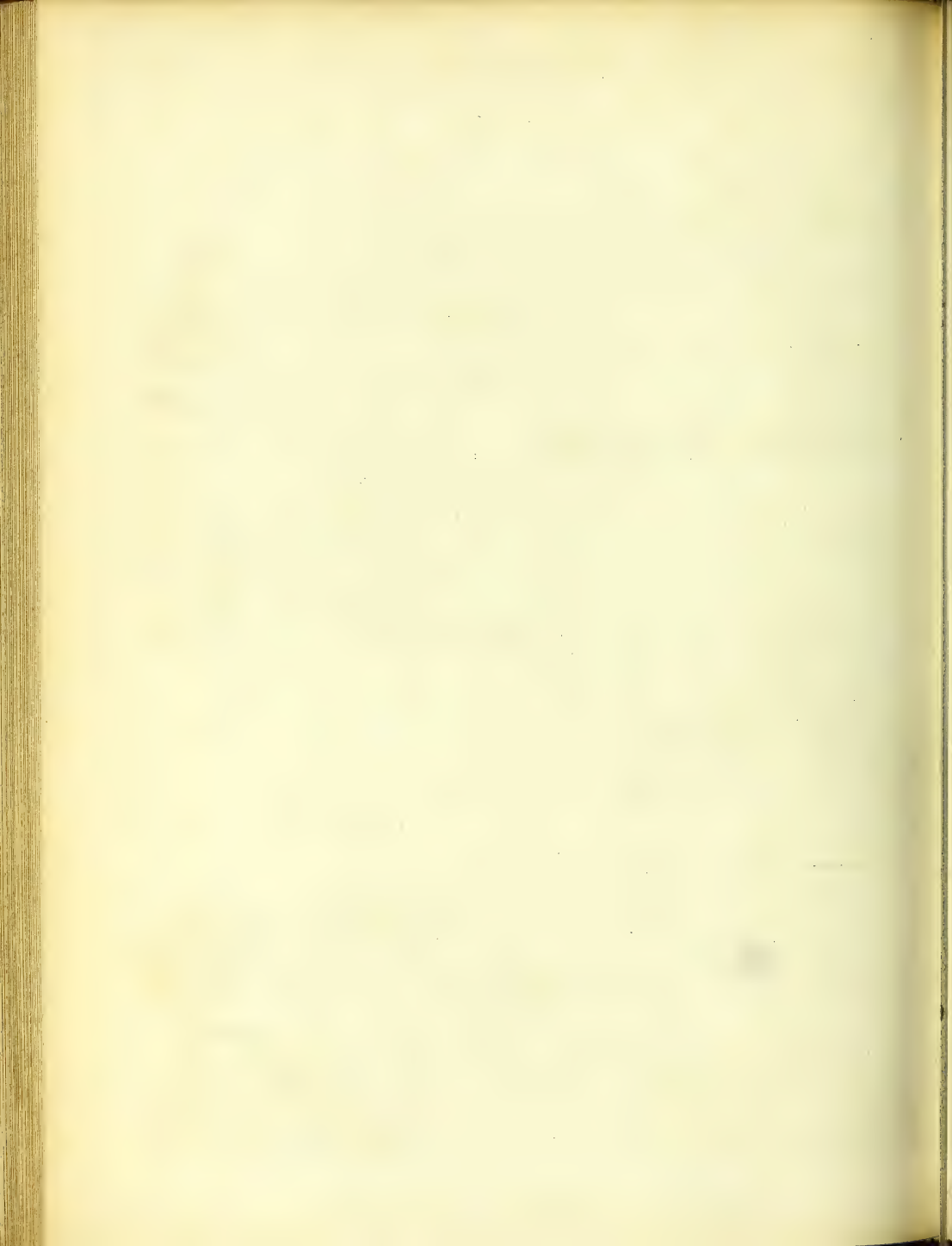


Fig. 1.

View of a
Common Breast Mill.

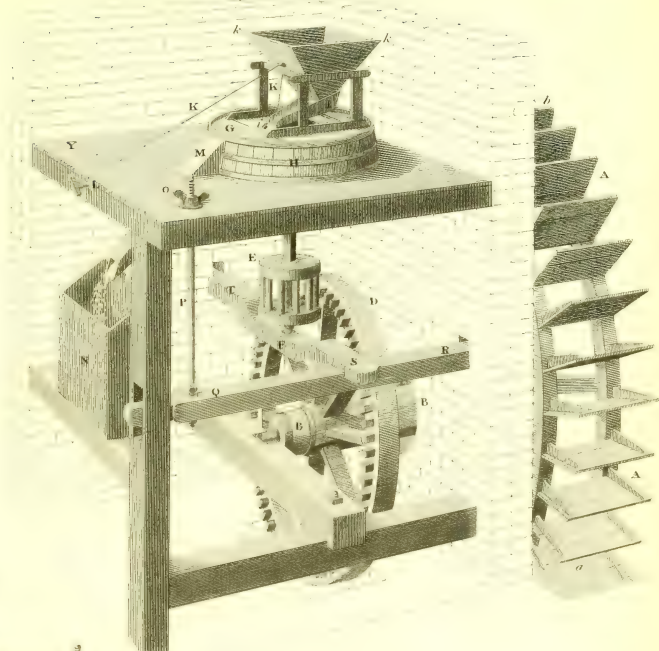
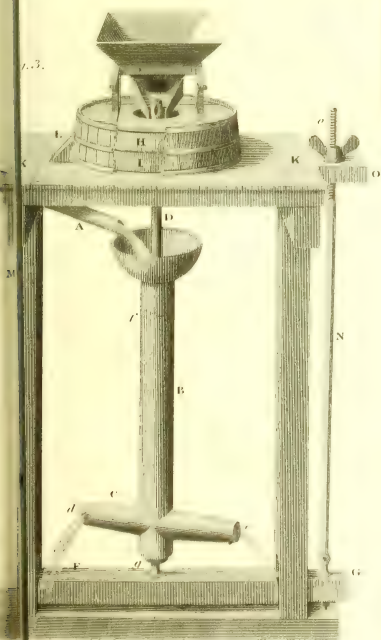


Fig. 2.

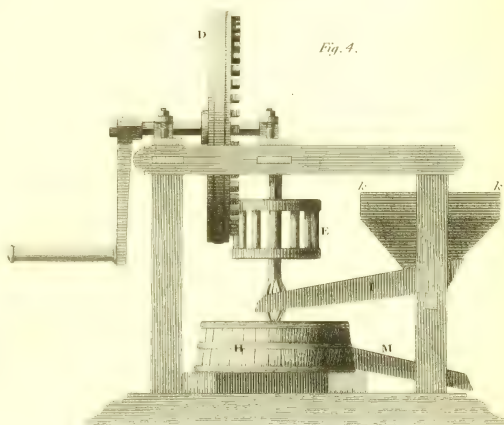


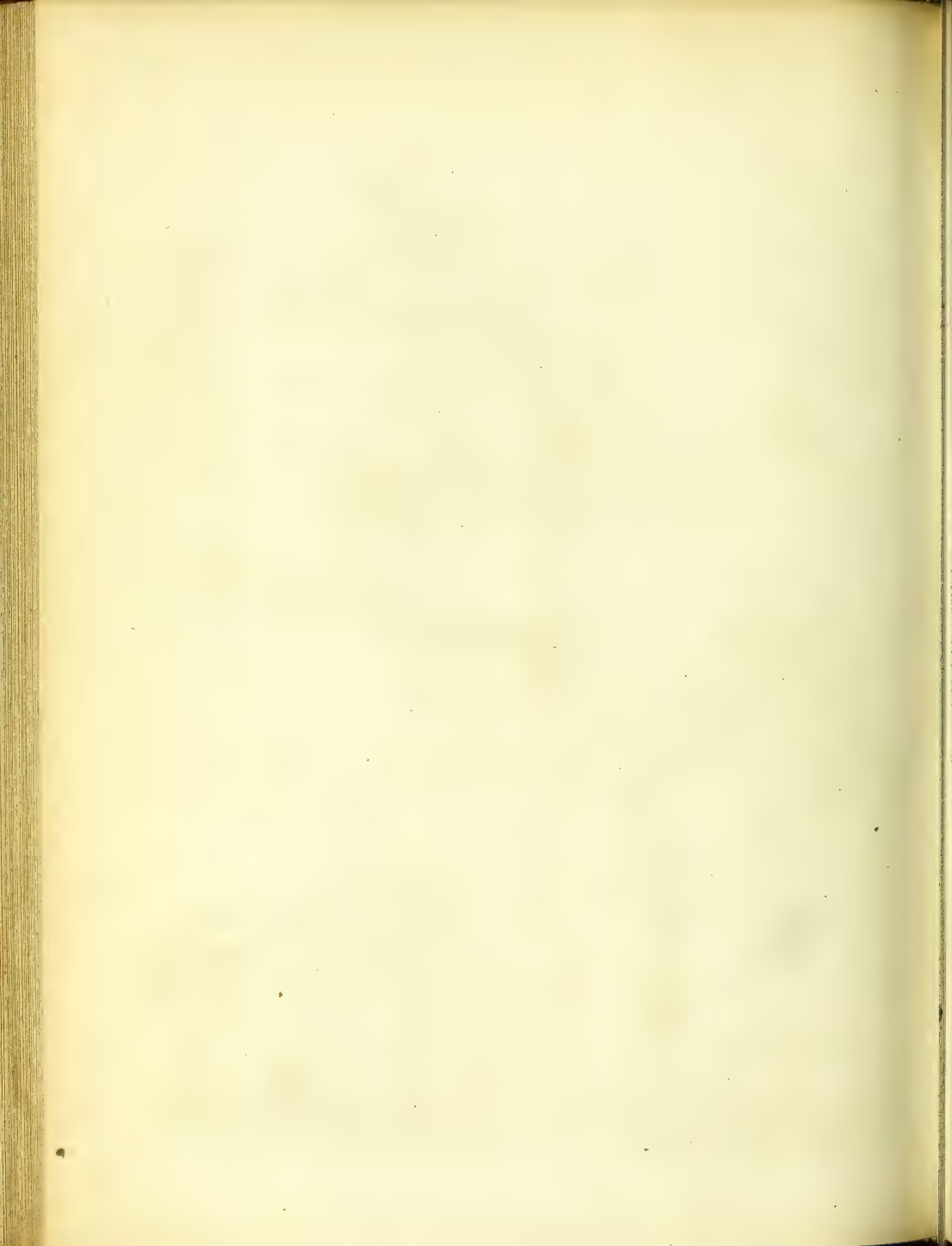
D^r Barker's Mill.



Portative or Hand Mill.

Fig. 4.





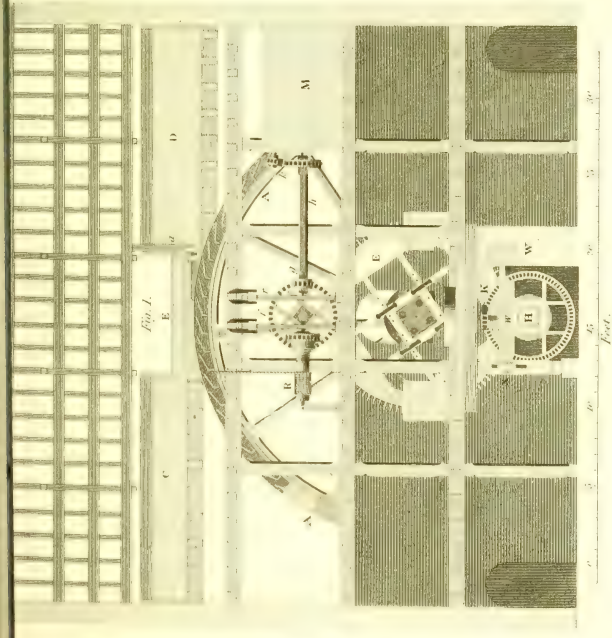


Fig. 1.

Transverse Section.

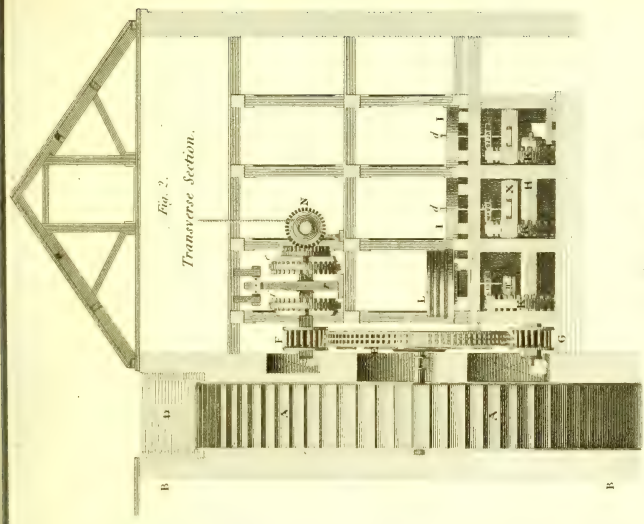


Fig. 2.

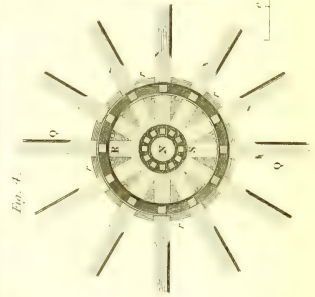


Fig. 4.

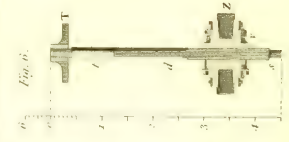


Fig. 6.



Fig. 7.

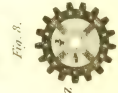


Fig. 8.

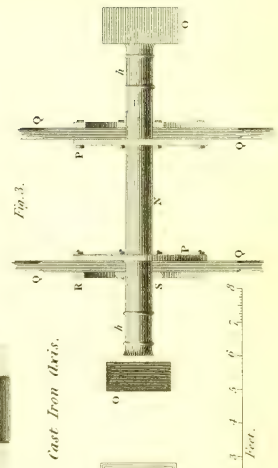
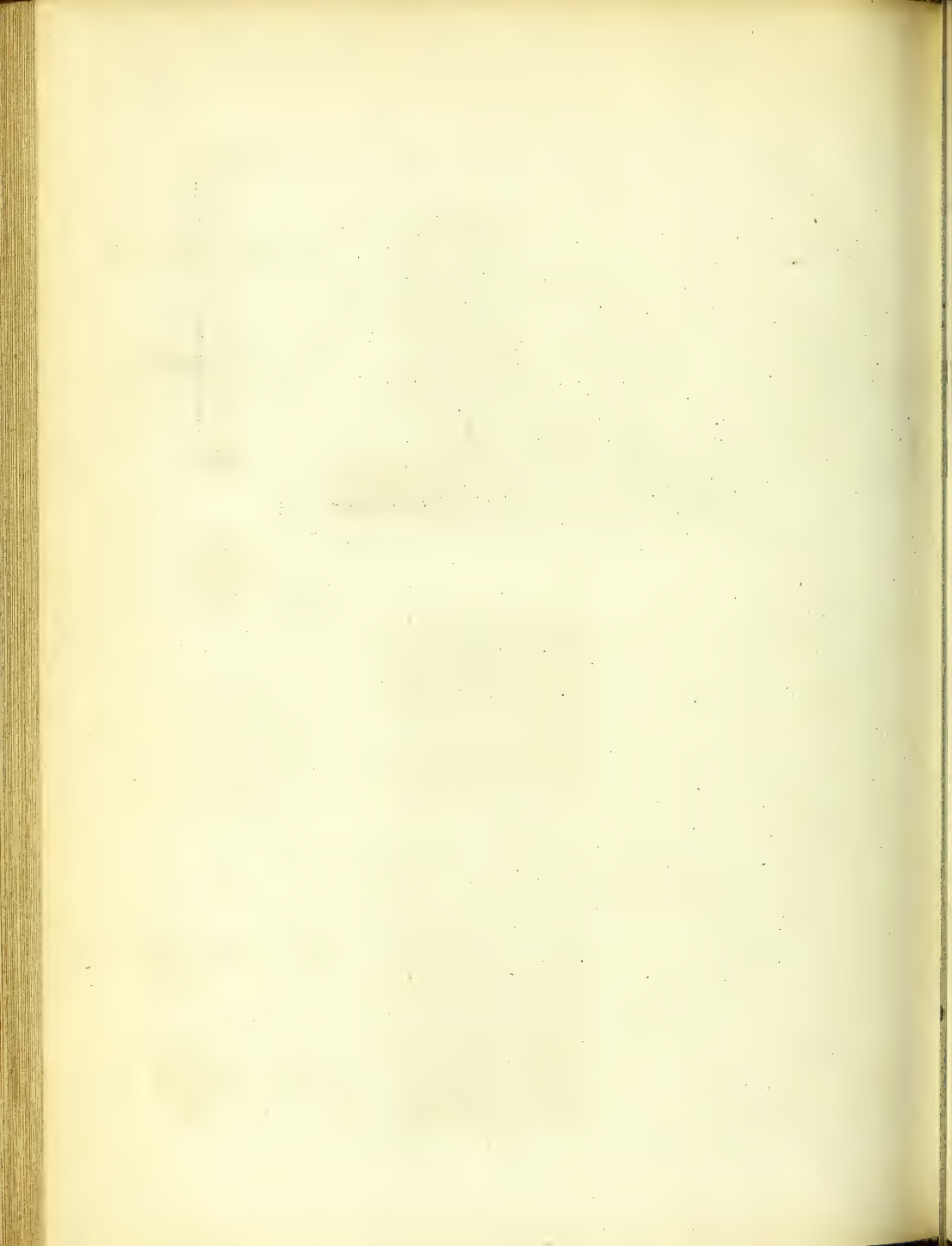


Fig. 3.

Cast Iron Valve.



Fig. 5.



MOTION. &c.

Fig. 1.



Fig. 2.

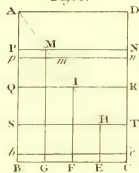


Fig. 3.

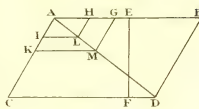


Fig. 4.

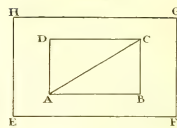


Fig. 5.

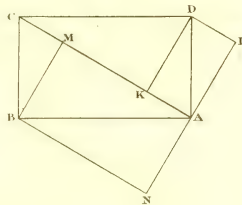


Fig. 6.

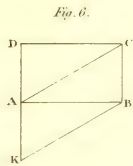
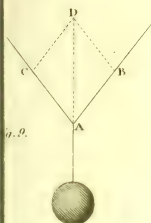
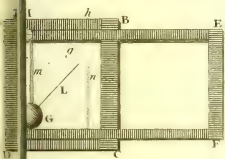
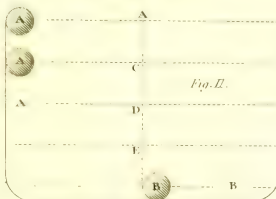


Fig. 7.



PERPETUAL MOTION



PERCUSSION

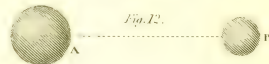


Fig. 11.

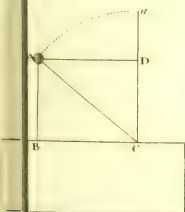
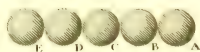
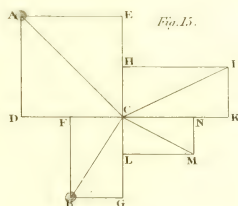


Fig. 12.



PERCUSSION



INCLINED PLANE.

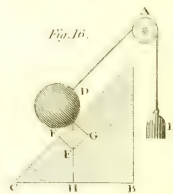


Fig. 15.

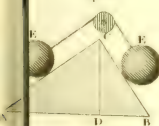


Fig. 16.

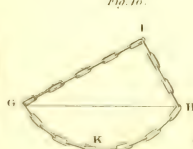


Fig. 17.

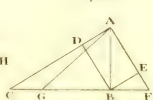


Fig. 18.

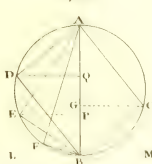
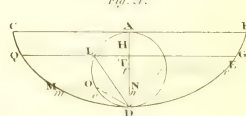


Fig. 19.



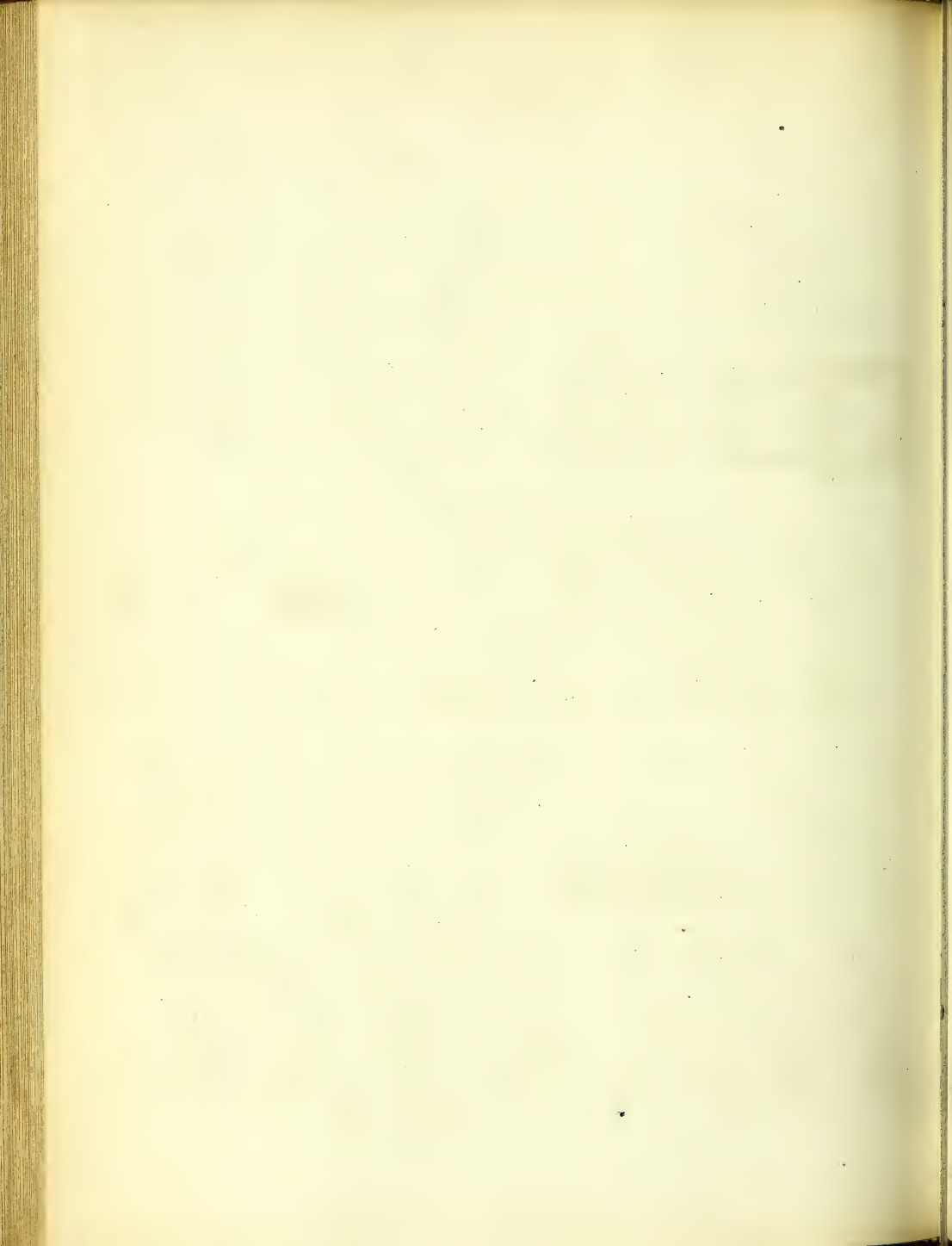


Fig. 2.

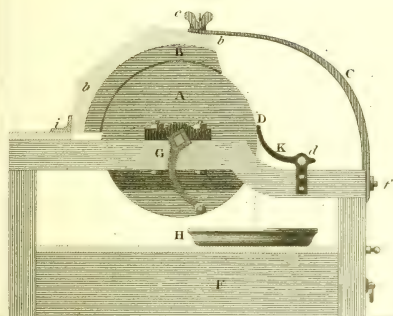


Fig. 1.

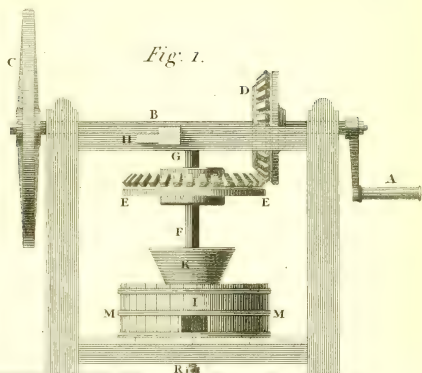


Fig. 5.

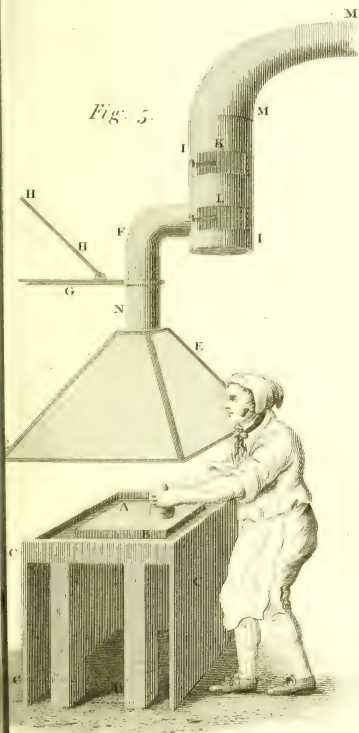
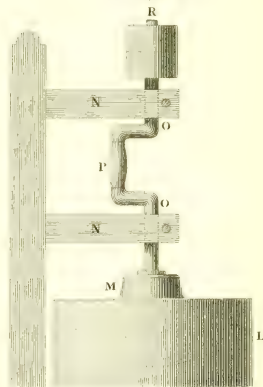


Fig. 4.



Fig. 3.



Lower Stone

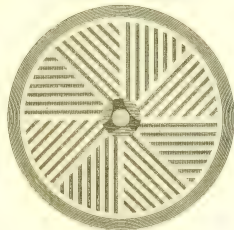
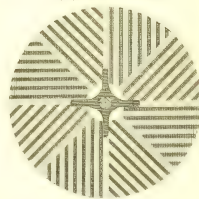
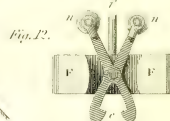
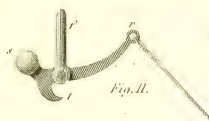
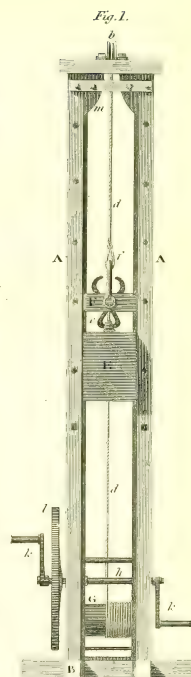
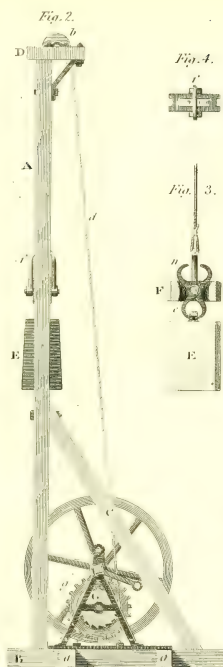
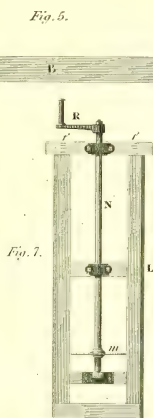
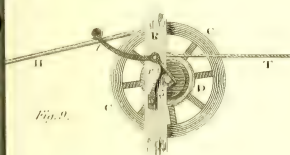
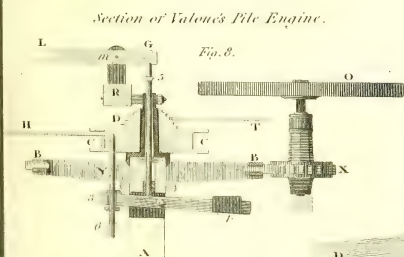
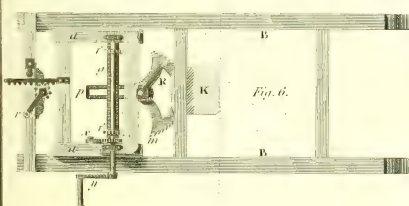
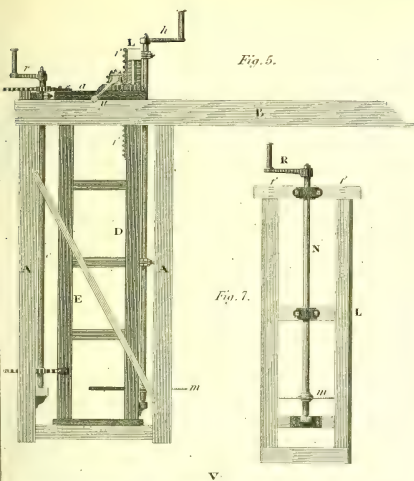


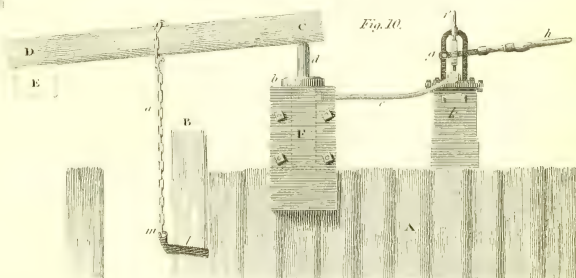
Fig. 6.

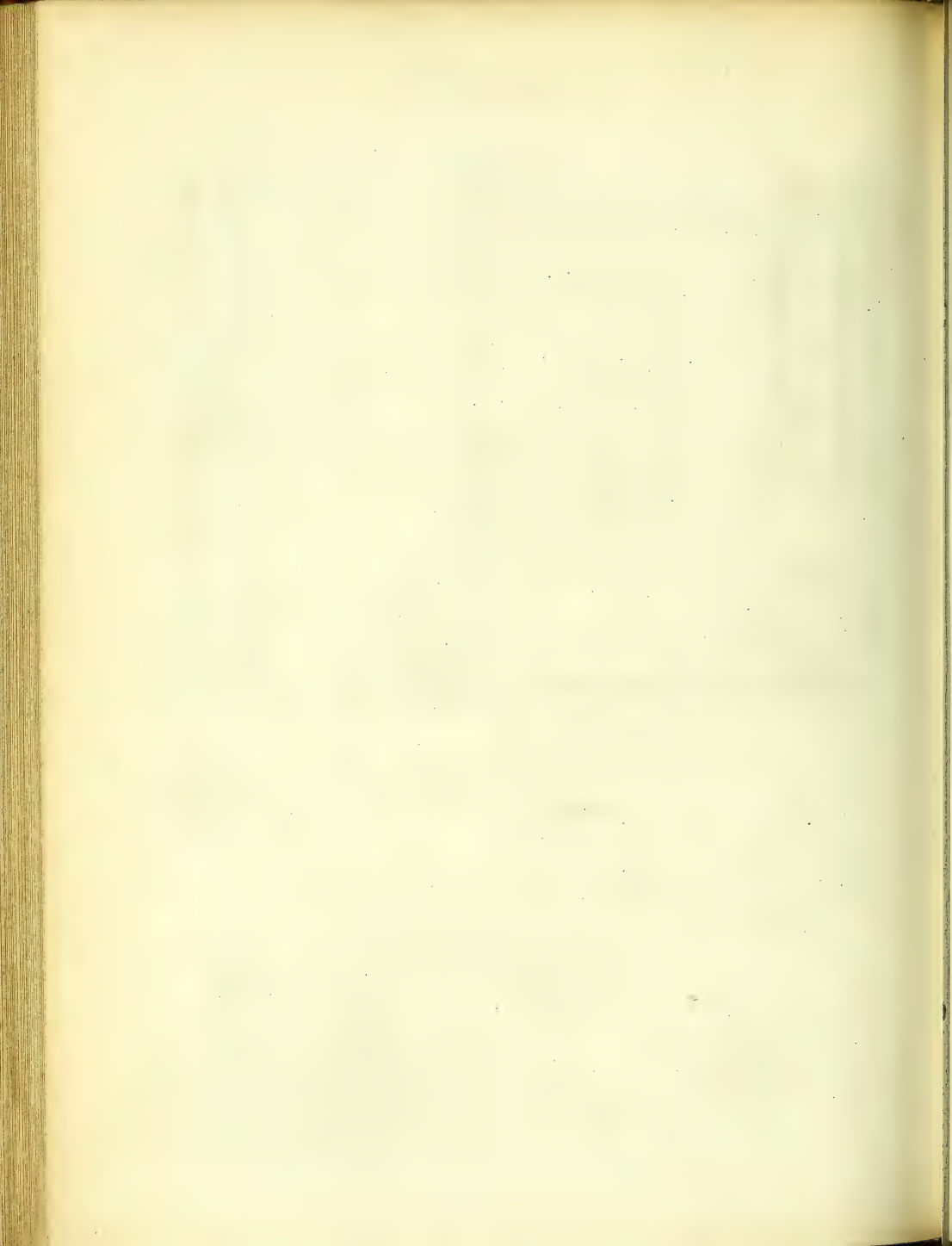
Upper Stone





*Mr Bramah's Machine for Drawing
Piles out of the Ground.*





ROTATION.

Fig. 1.

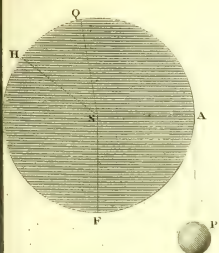


Fig. 2.

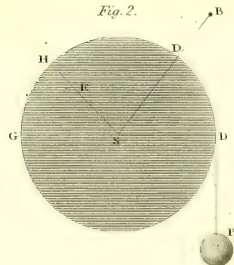


Fig. 3.

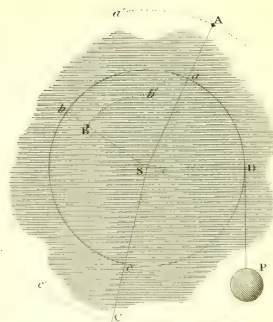


Fig. 5.

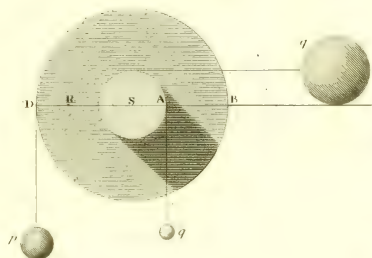


Fig. 8.

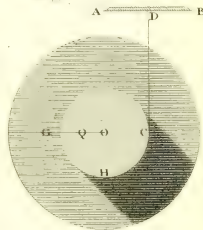


Fig. 6.

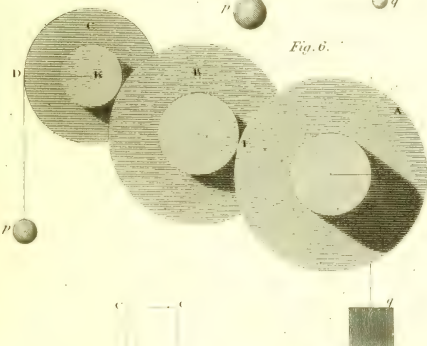


Fig. 7.

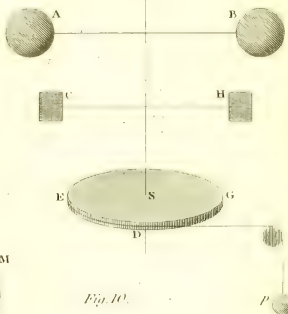


Fig. 9.

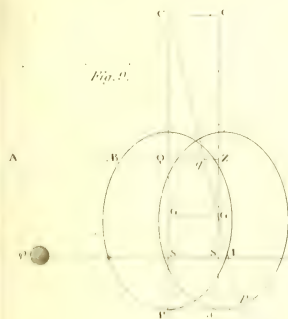
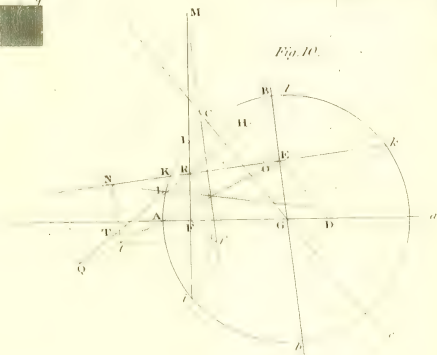
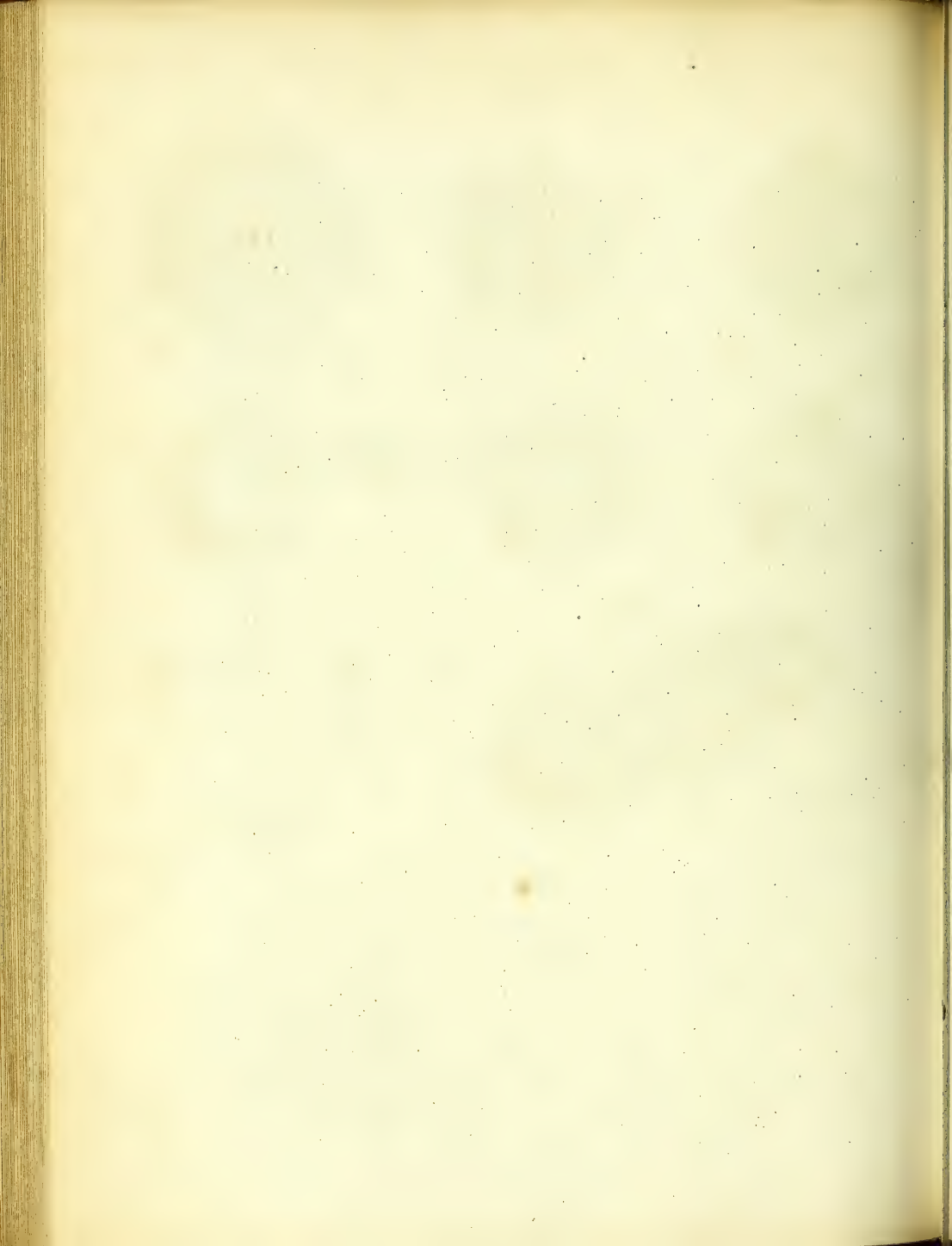


Fig. 10.





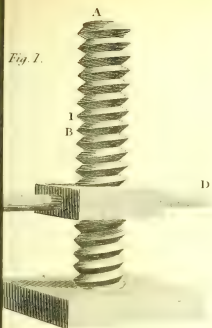


Fig. 1.

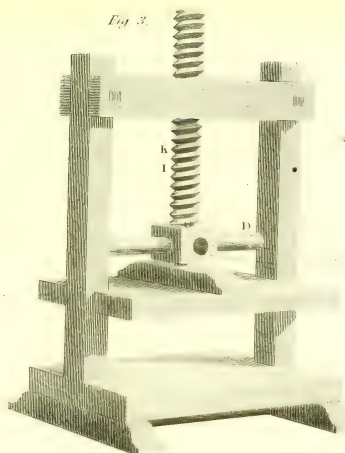


Fig. 3.

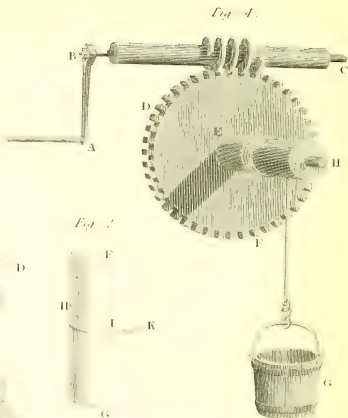


Fig. 4.



Fig. 2.

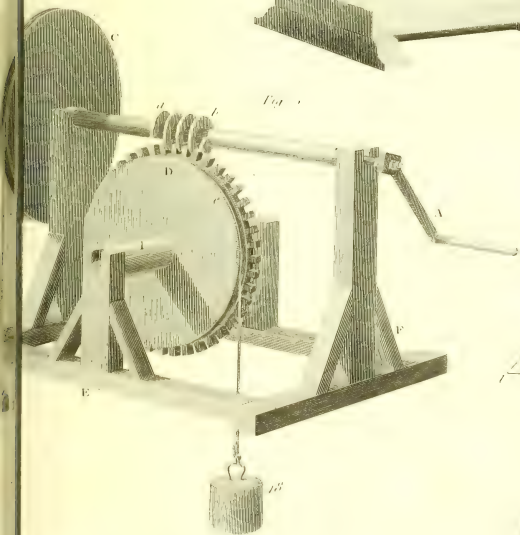


Fig. 5.

SPRING. Fig. 6.



Fig. 7.

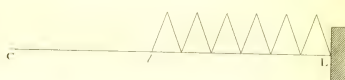


Fig. 8.



Fig. 10.

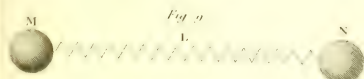
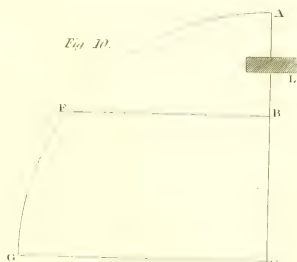


Fig. 9.

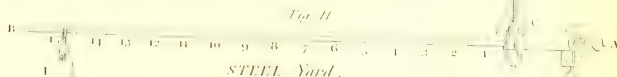


Fig. 11.

STEEL Yard.

STRENGTH OF MATERIALS.

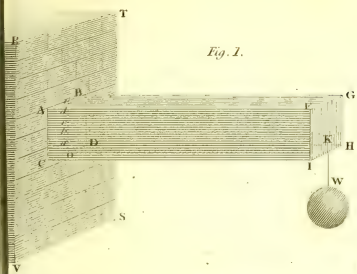


Fig. 1.

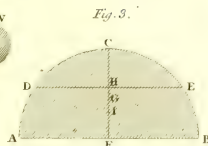


Fig. 3.

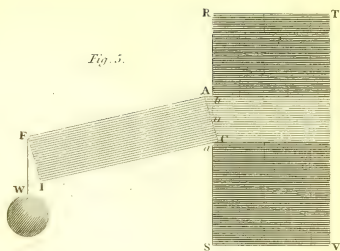


Fig. 5.

Fig. 2.

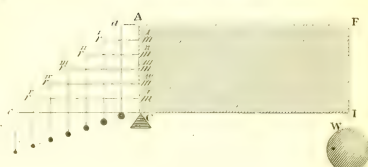
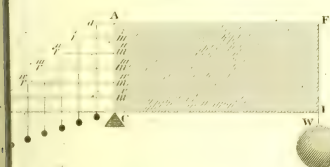


Fig. 4.

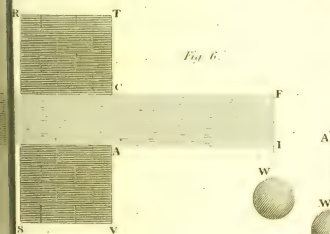


Fig. 6.

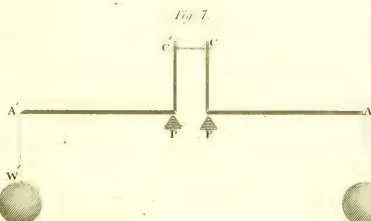


Fig. 7.

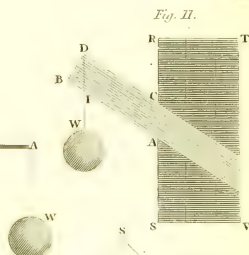


Fig. 11.

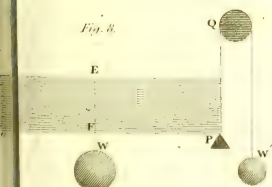


Fig. 8.

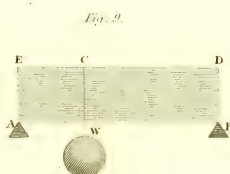


Fig. 9.

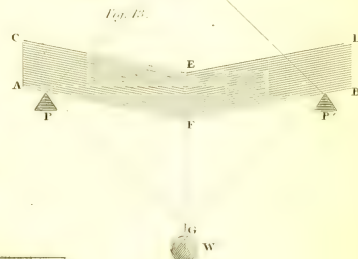


Fig. 13.

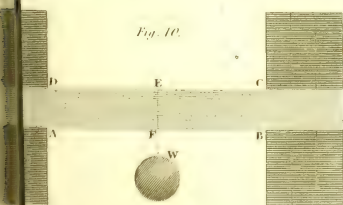
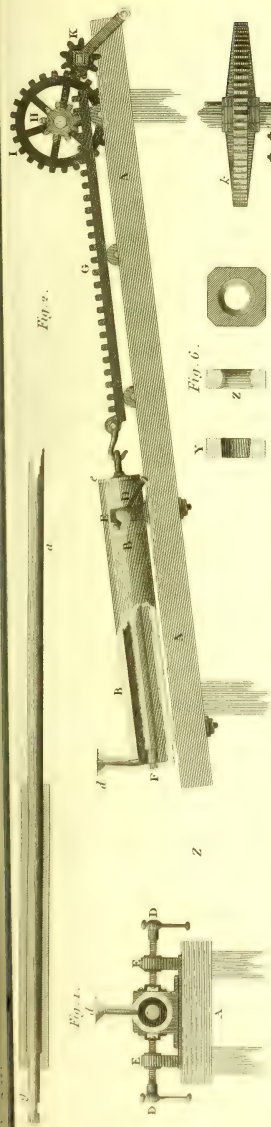


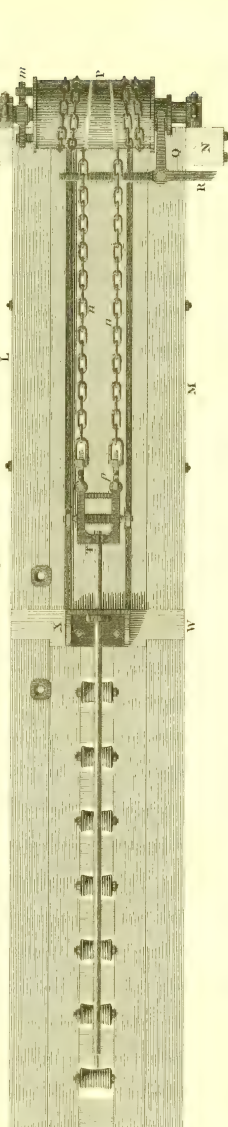
Fig. 10.



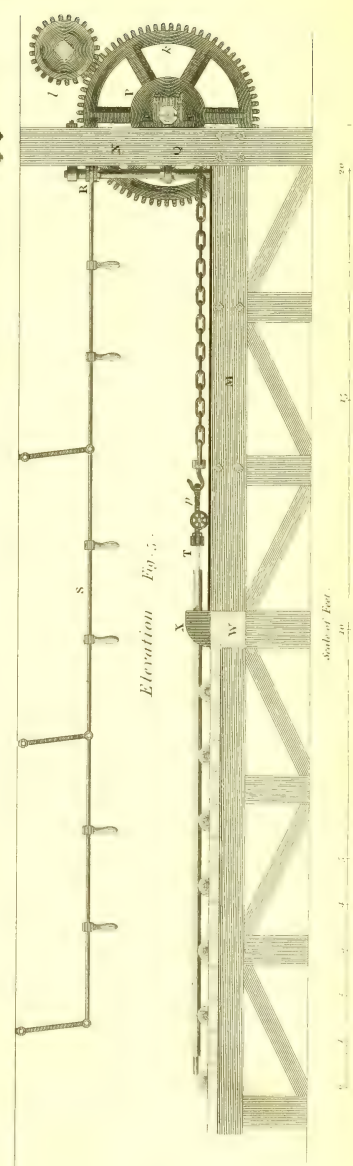
Fig. 14.



Plan Fig. 4.



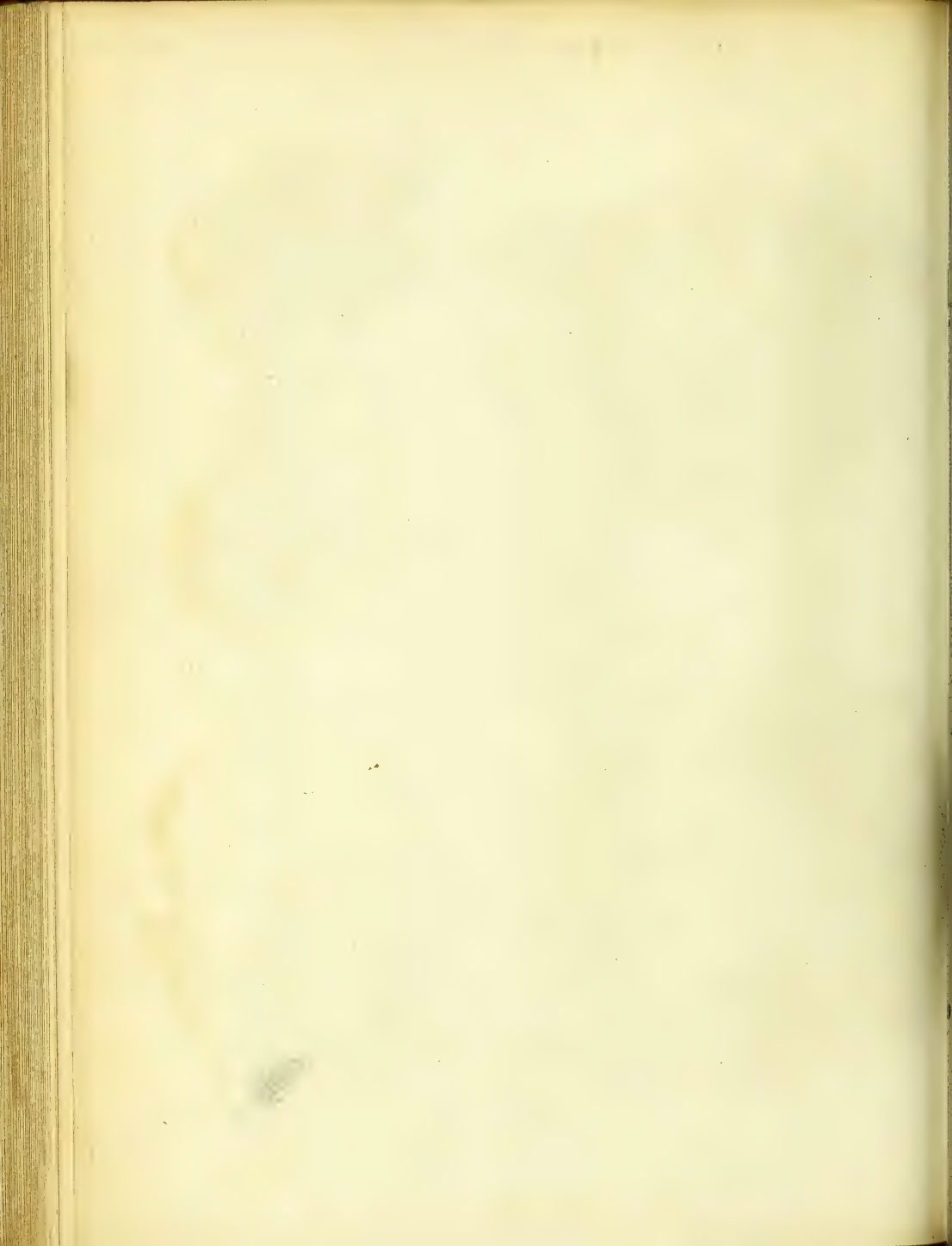
Elevation *Fig. 5.*



J. Fayy delin.

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Engraved by W. Lowry.



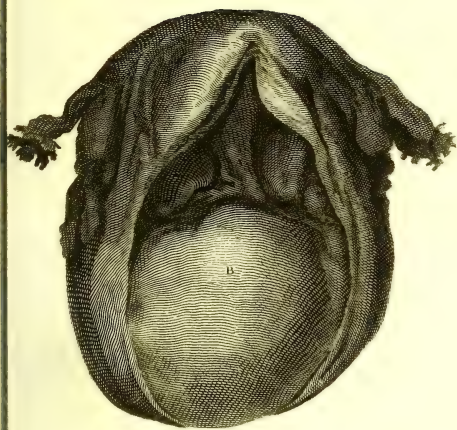


FIG. 1.

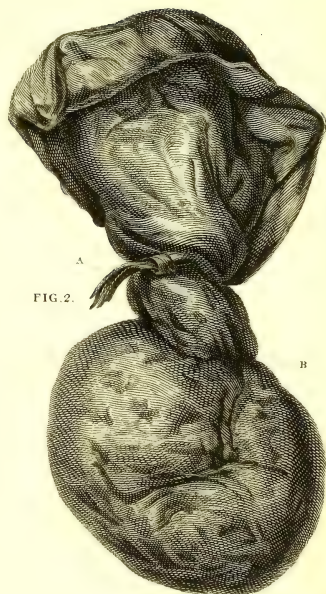


FIG. 2.

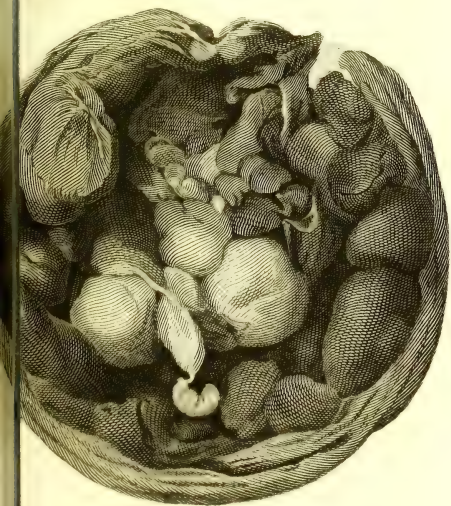


FIG. 3.

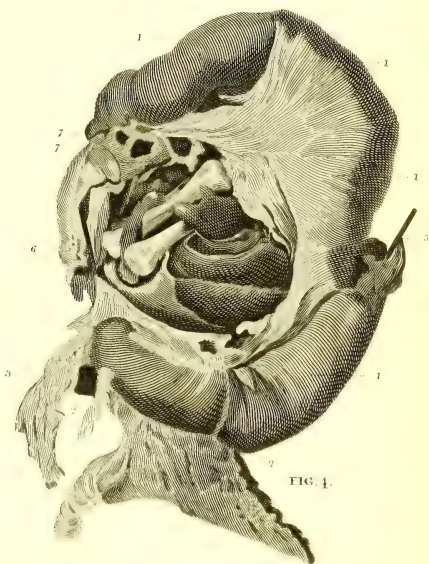
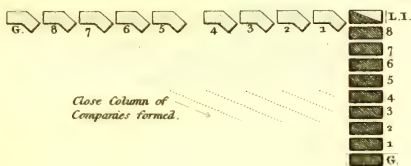


FIG. 4.



Close Column of Companies formed.

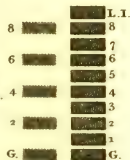
The Column advances.

2nd Manoeuvre.

Line formed.

Column of S.D. formed.

1st G.D. 2nd G.D. 3rd G.D. 4th G.D. L.I.



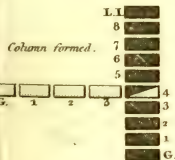
Intermarch of the Column.

4th Manoeuvre.

Rear Companies file into the new Direction.

G. Column takes a new position to the left.

Line wheeled back into open Column.



Column formed.

Close Column of Companies formed.

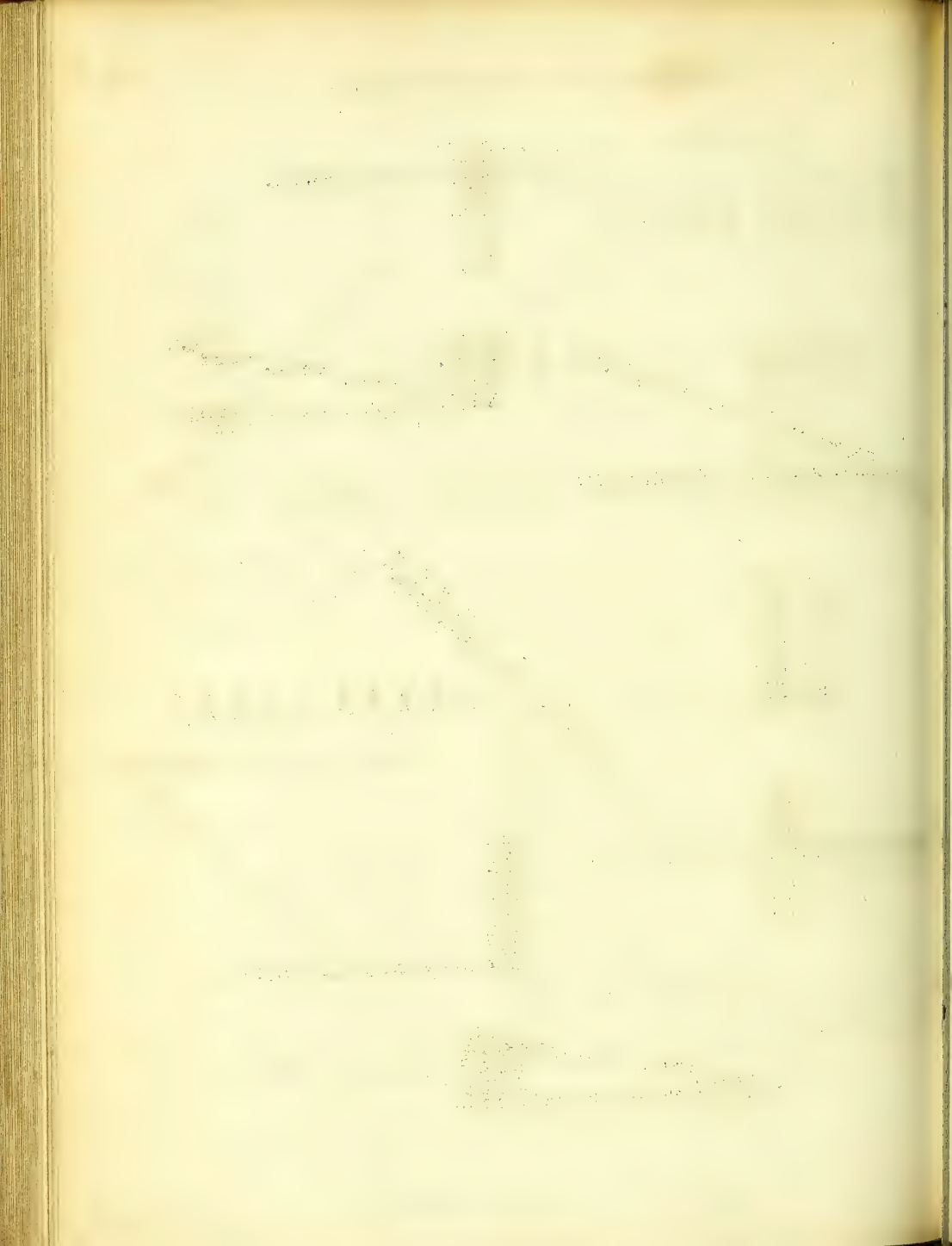
1st Manoeuvre.

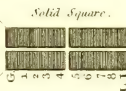
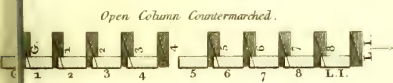
The Column advances.

The Column Deploys on the Light Infantry.

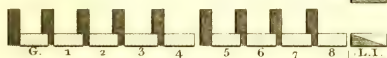
Column of Grand Divisions formed.

1st G.D. 2nd G.D. 3rd G.D. 4th G.D.

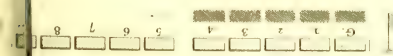
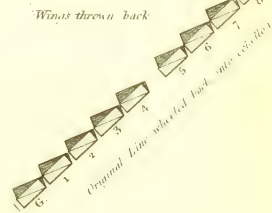


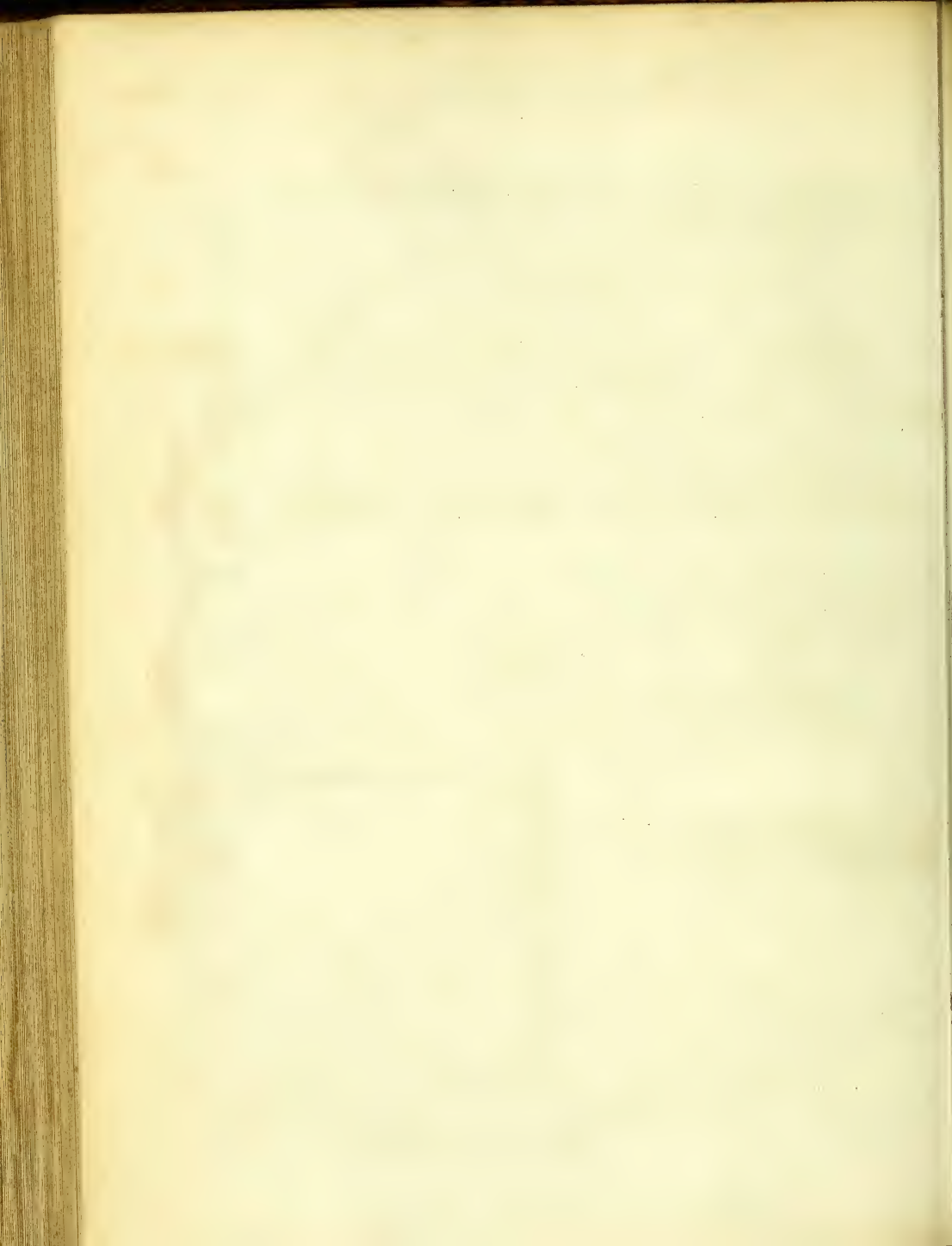


8th Manœuvre.

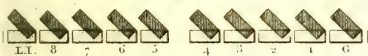


5th Manœuvre.





13th Manœuvre.



10th Manœuvre.



Line formed on the Light Infantry.

11th Manœuvre.



12th Manœuvre.



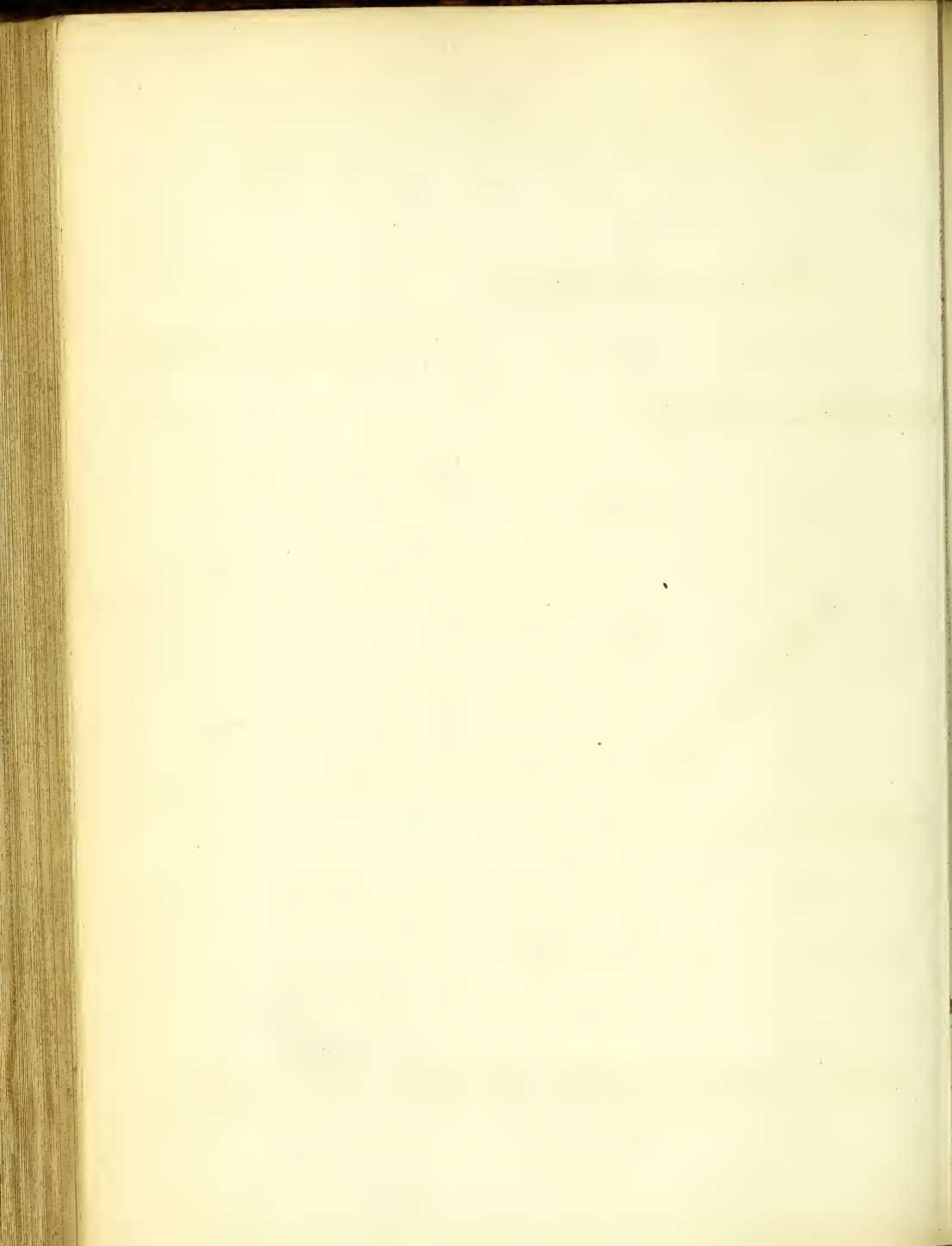
Retiring by alternate companies covered by the Light Infantry

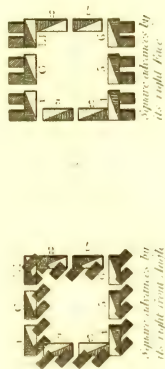
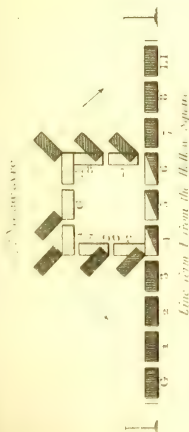
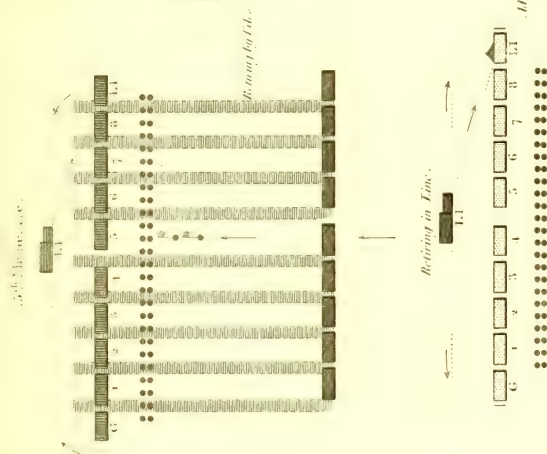
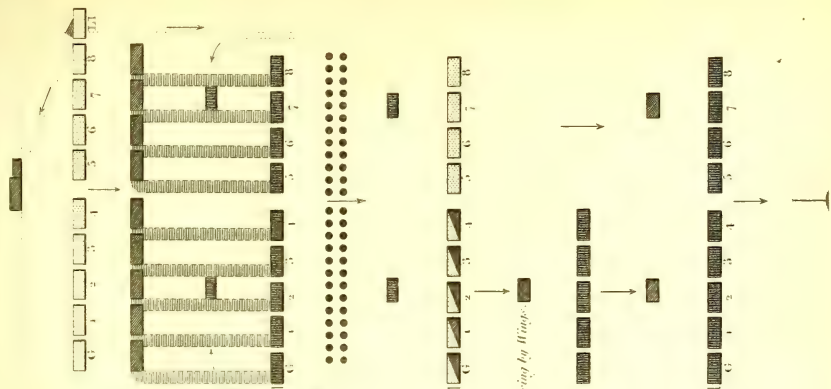


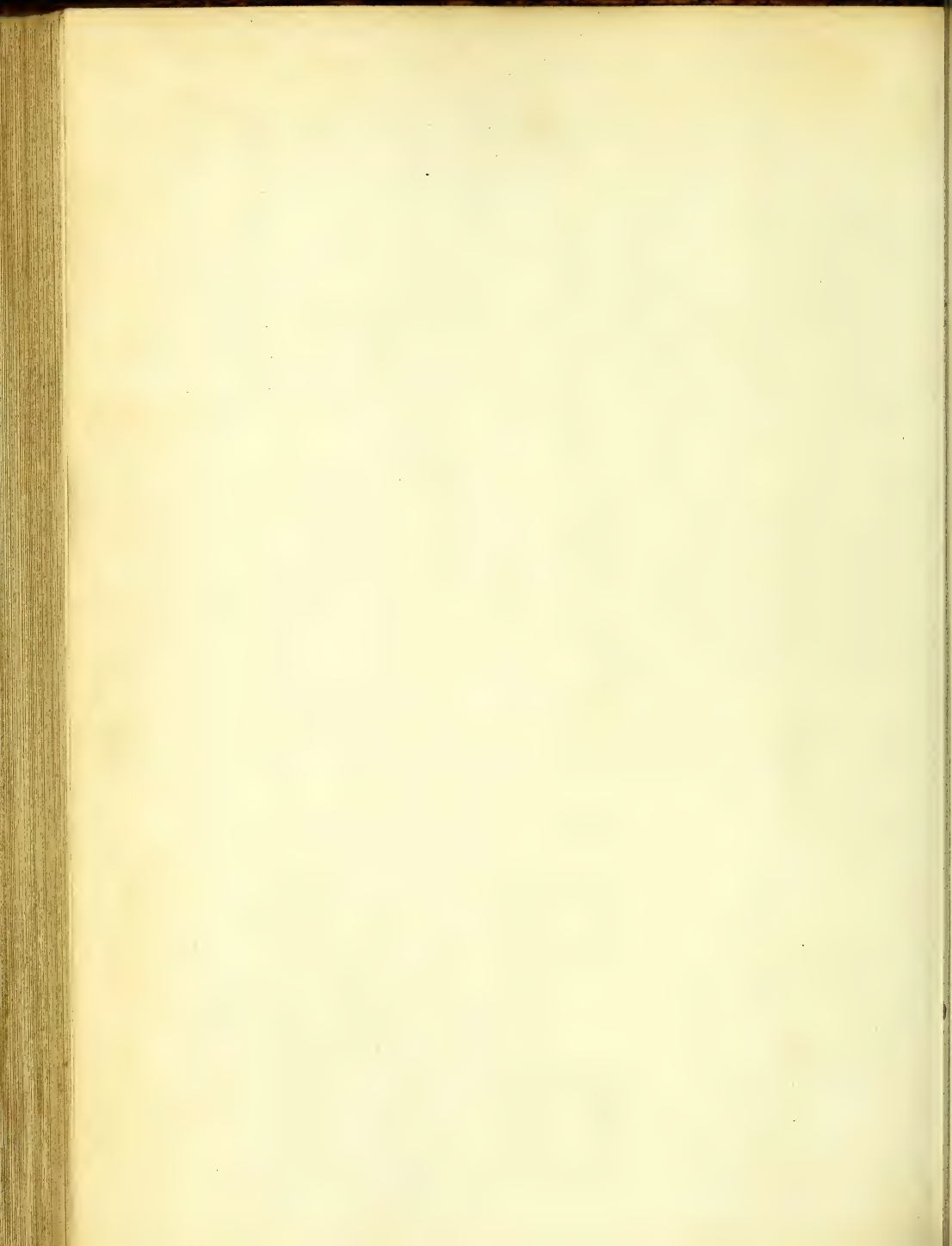
Retreat in Line Covered by the Light Infantry



Open Column formed from mass



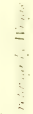




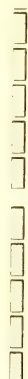
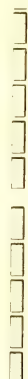
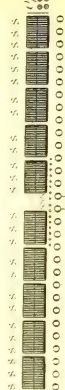
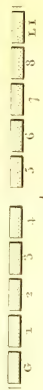
17th Manoeuvre.



18th Manoeuvre.



19th Manoeuvre.





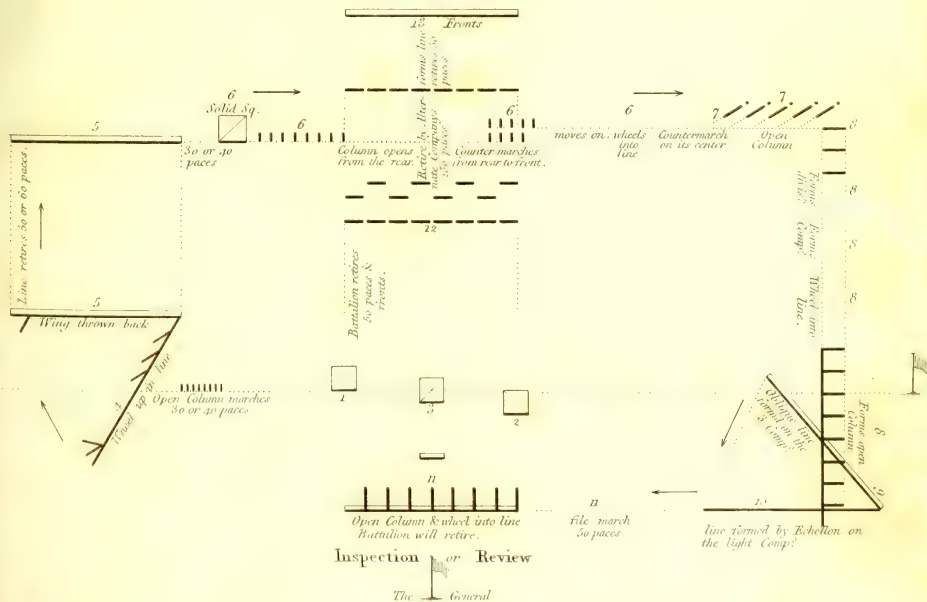
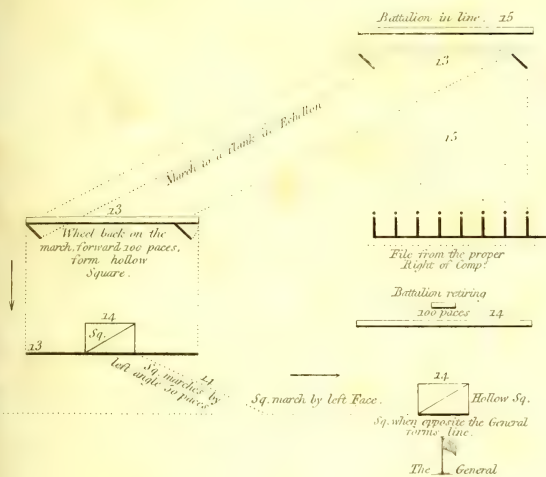




Fig. 1.

Fig. 1.

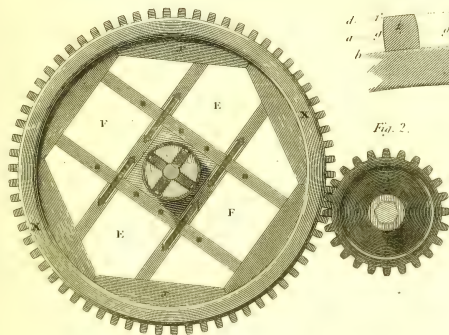


Fig. 2.

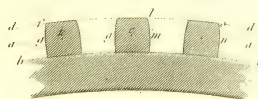
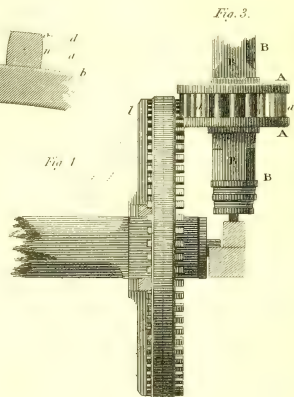


Fig. 3.



Bevilled Wheels.

Fig. 5.

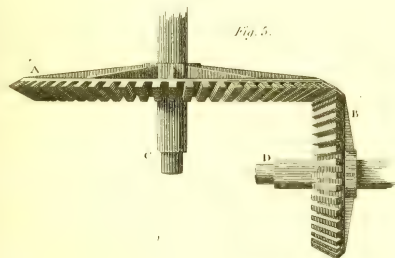
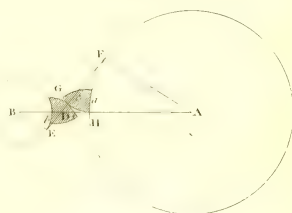


Fig. 6.



Conical Wheels.

Fig. 7.

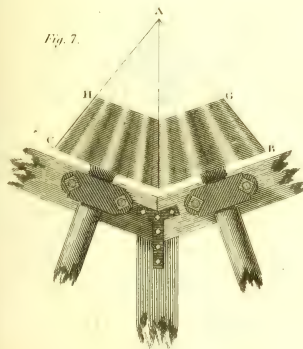
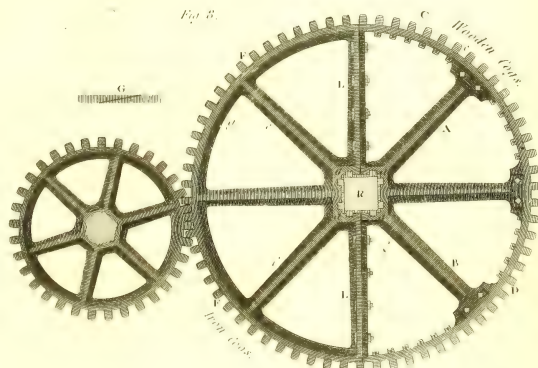
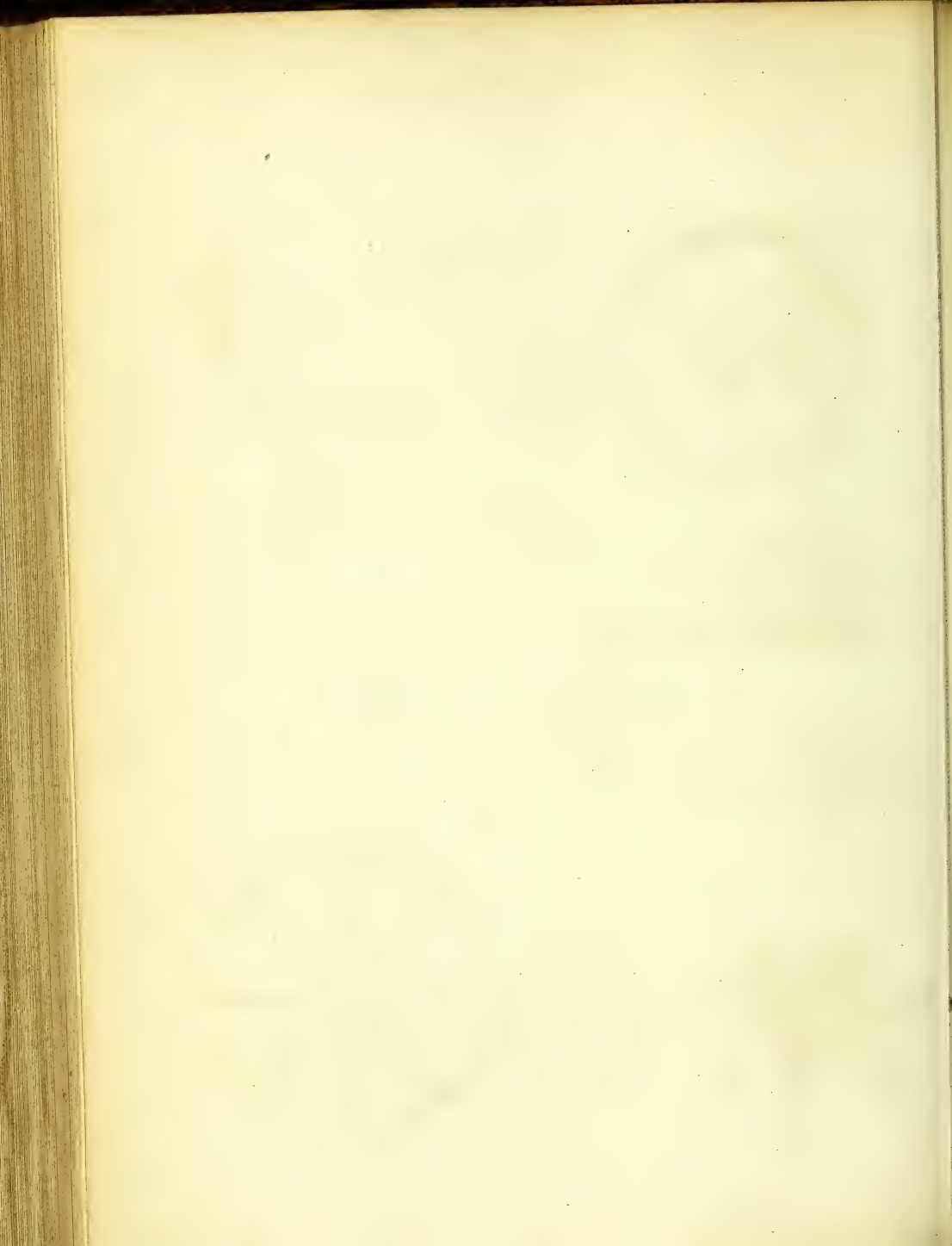
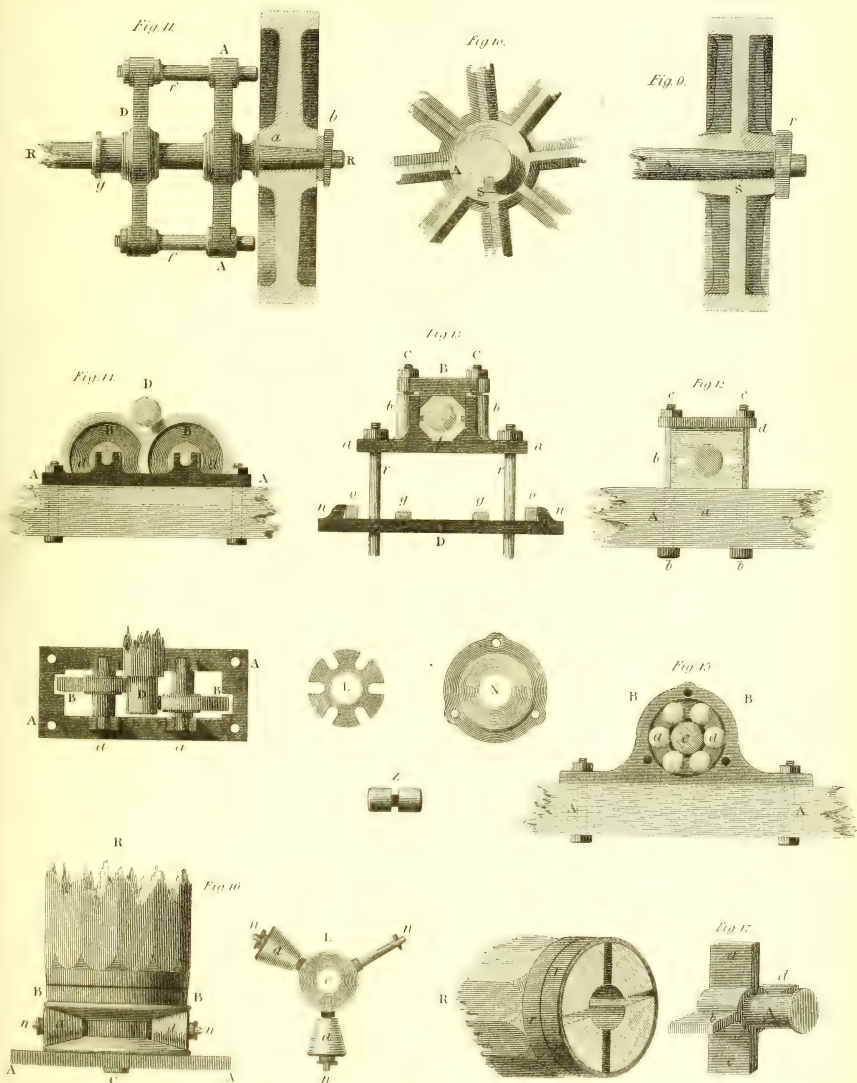
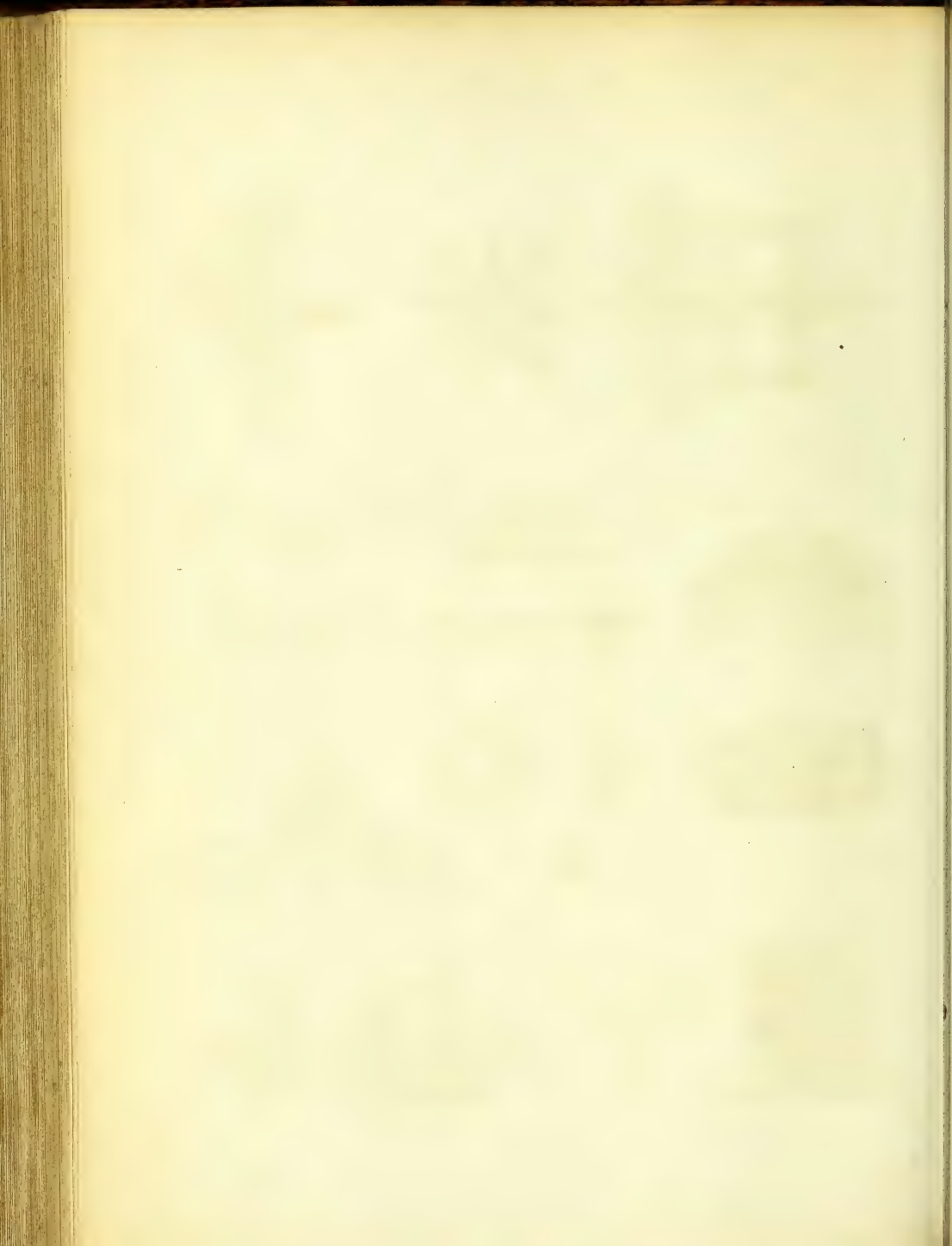


Fig. 8.



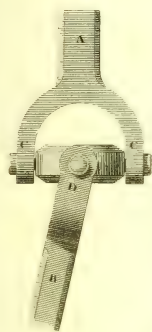






MILL WORK

Fig. 21.



N^o 1.

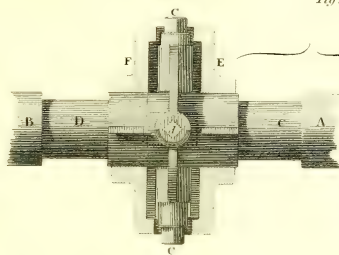


Fig. 19.

N^o 2.

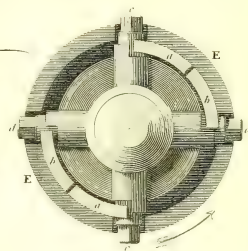


Fig. 16.



Fig. 20.

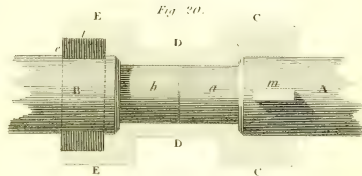


Fig. 22.

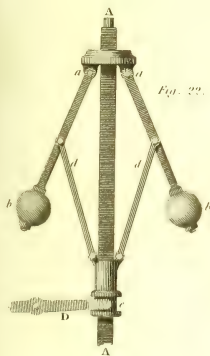


Fig. 23.

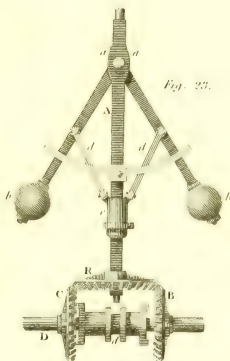


Fig. 26.

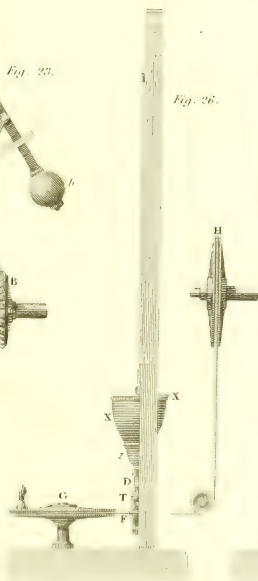


Fig. 25.



Fig. 24.

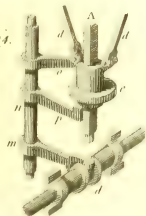


Fig. 27.



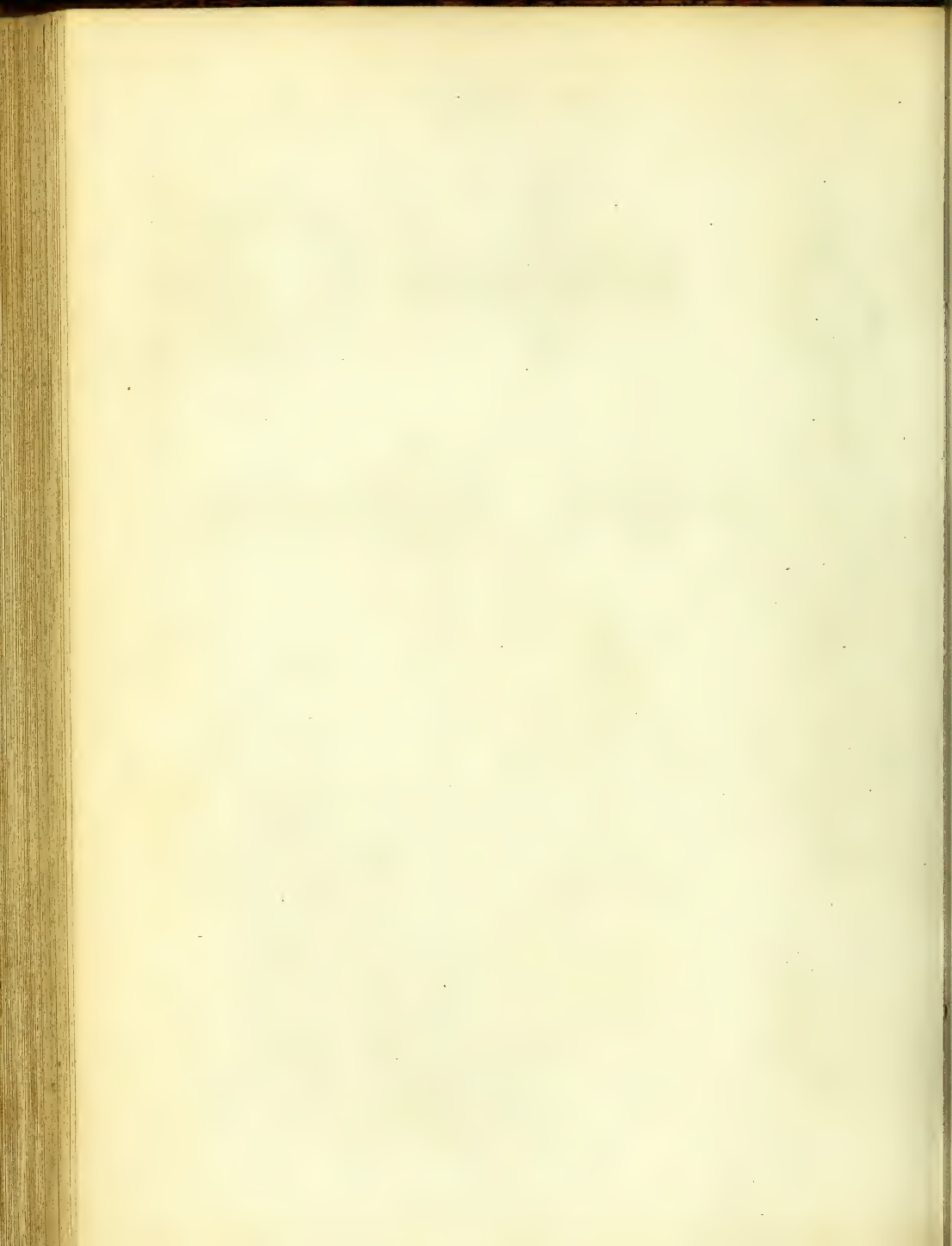


Fig. 1.



Fig. 2.

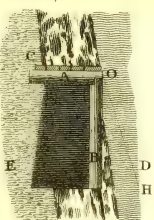


Fig. 3.

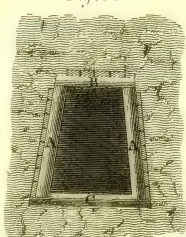


Fig. 4.

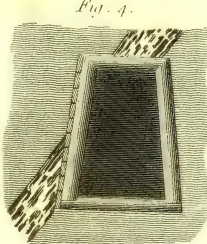


Fig. 5.

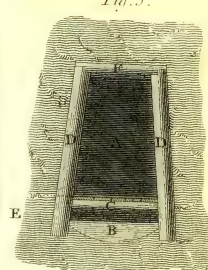


Fig. 6.

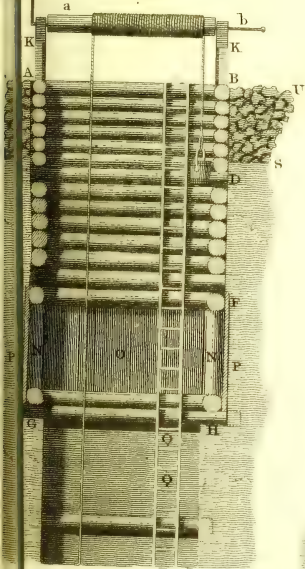


Fig. 7.

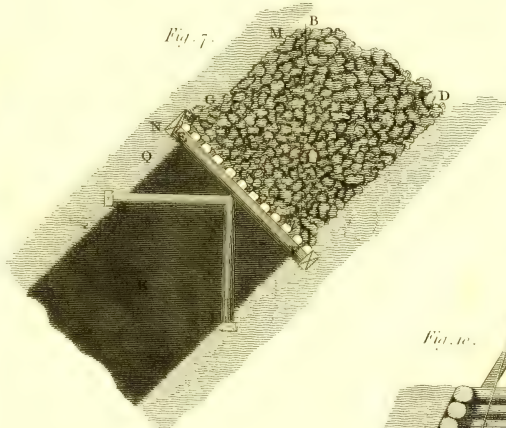


Fig. 8.

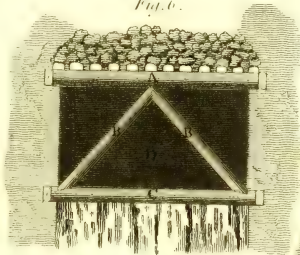


Fig. 9.

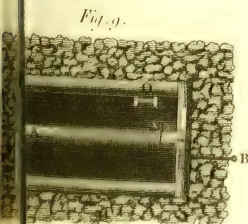
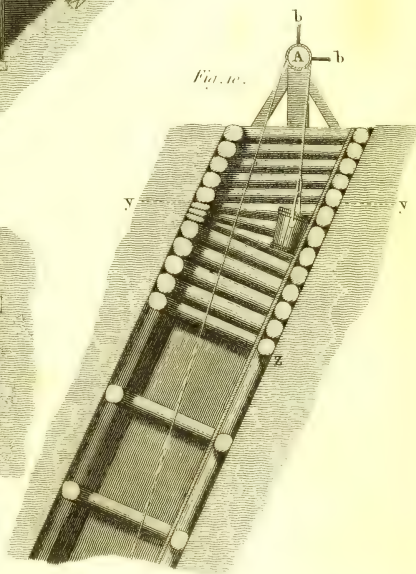


Fig. 10.



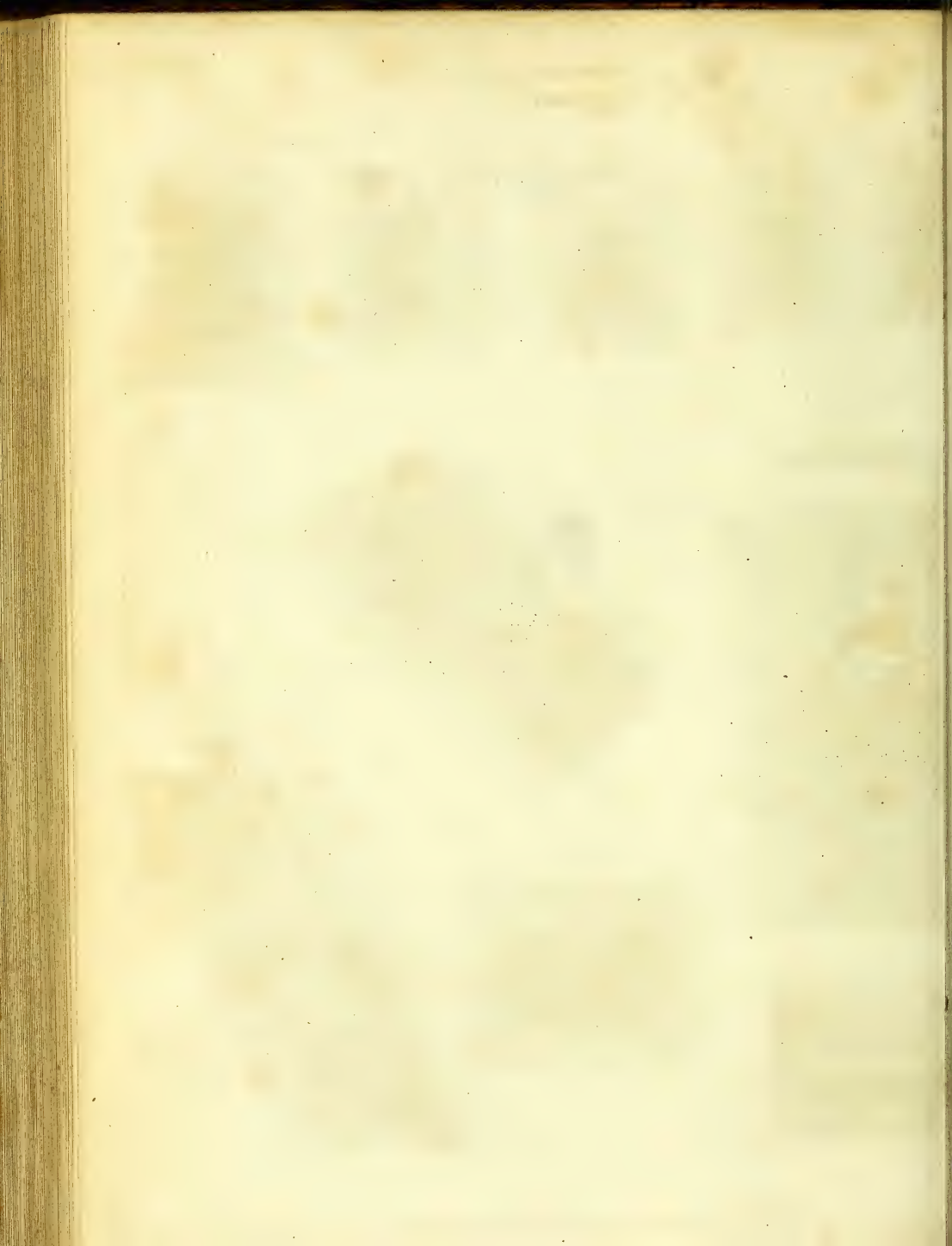
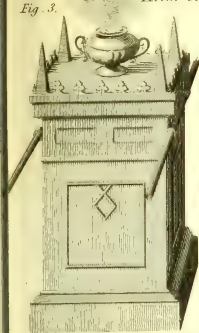
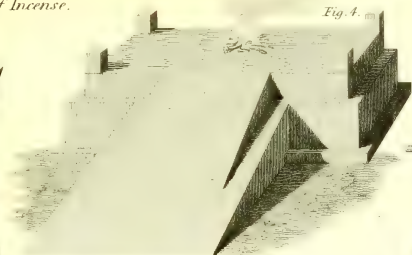


Fig. 3. Altar of Incense.



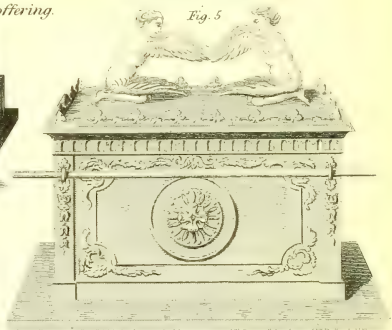
Altar of burnt offering.

Fig. 4.

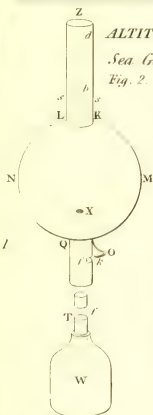


ARK of the Covenant.

Fig. 5



ALTITUDE of the Sea
Sea Gage
Fig. 2



NEPER'S Bones
Fig. 6.

1	0	1	2	3	4
2	0	2	4	6	8
3	0	3	6	9	2
4	0	4	8	2	6
5	0	5	0	6	0
6	0	6	2	8	4
7	0	7	4	1	8
8	0	8	6	2	2
9	0	0	1	2	3

5	6	7	8	9
1	2	4	6	8
0	4	8	2	7
1	2	4	6	8
2	2	2	3	3
2	3	0	6	0
2	3	3	4	4
0	6	2	8	4
3	3	4	4	5
3	4	4	5	6
0	8	6	4	2
4	4	5	6	7
4	5	6	7	8

1	5	9	7	8
2	0	8	4	6
3	1	2	2	4
4	0	6	8	2
5	2	4	3	4
6	0	4	2	8
7	3	6	3	9
8	0	2	6	6
9	4	8	3	7

ANCIENT ARITHMETICAL CHARACTERS.

Fig. 7

Notes of Boethius.	I	3	u	¶	4	L	A	8	9
Characters of Placidus.	1	p	u	ε	f	q	v	^	q 10
Characters of Al Sephadi.	1	p	u	ε	8	q	v	^	q 10
Characters of Sacro Bosco.	1	τ	3	8	6	6	v	8	q 10
Indian Characters.	9	z	ε	8	γ	3	9	τ	ρ 10
Characters of Roger Bacon.	1	7	3	8	6	6	v	8	q 10
Modern Figures.	1	2	3	4	5	6	7	8	9 10
A Number expressed by Al Sephadi.	1	^	ε	ε	γ	v	ε	ε	γ v u ^ q 8 8 - q 8
The same in the Modern Notation.	1	8	4	4	6	7	4	4	0 7 3 7 0 9 5 5 1 6 1 5

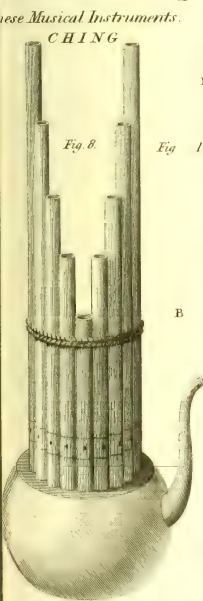
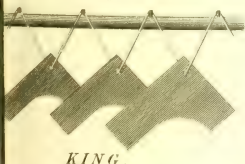
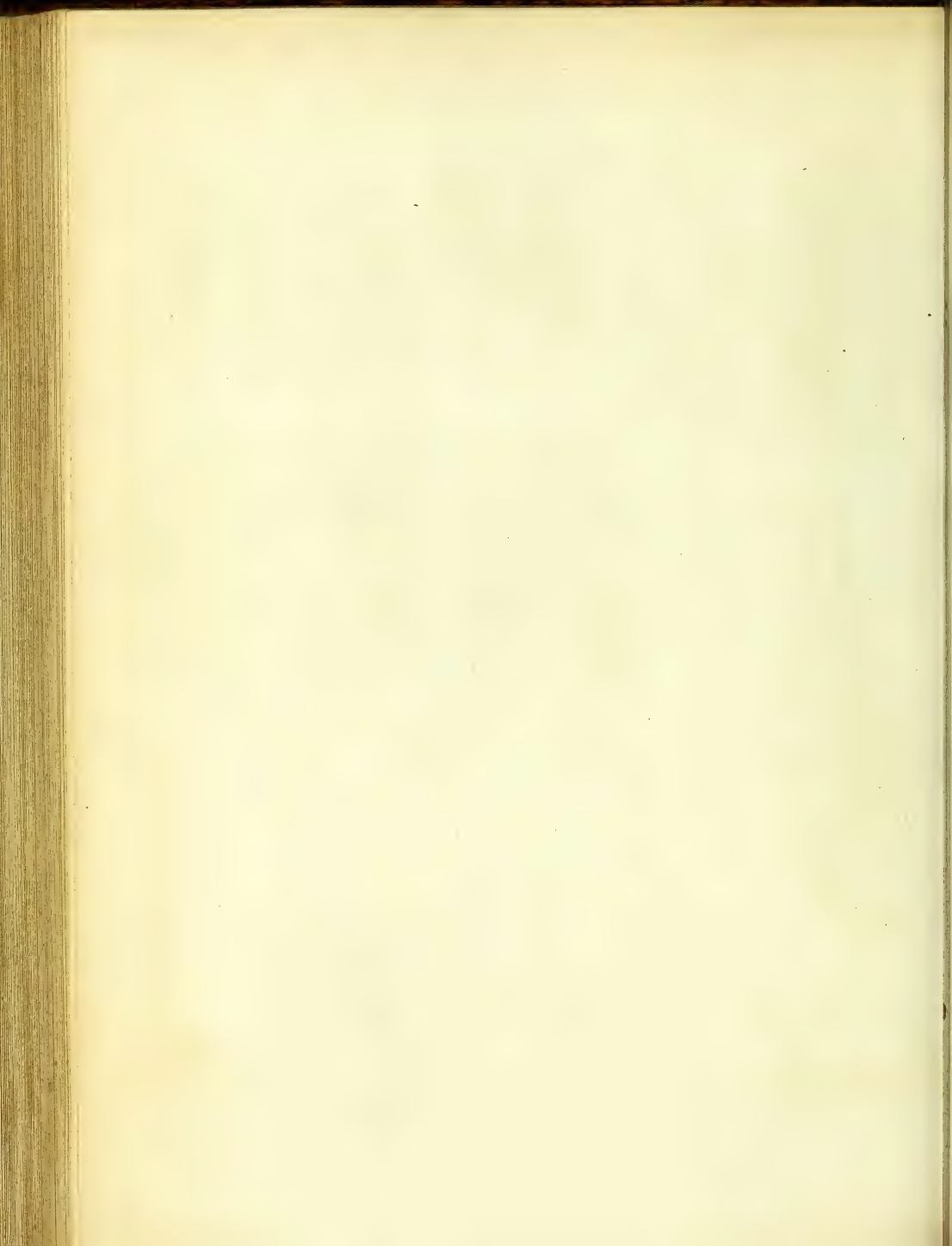


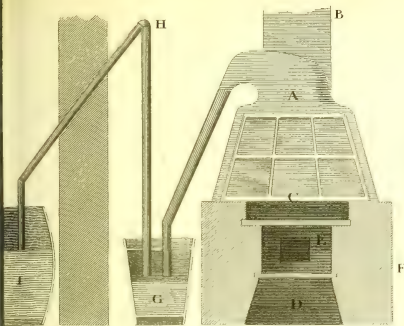
Fig. 8.



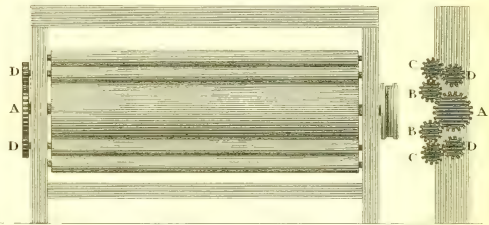
KING.



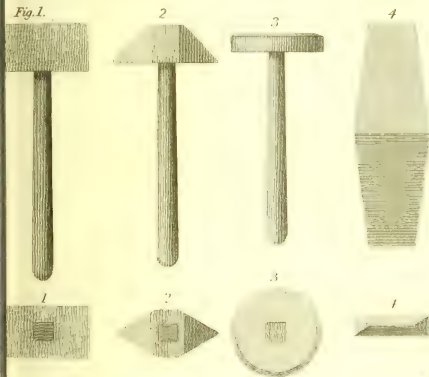
BUTTON Making



GLAZING Cloth



Tools for cutting GUN FLINTS



Smarts CHIMNEY CLEANSING Machine Fig. 1.

Fig. 2.

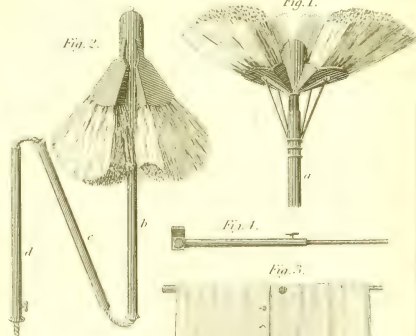


Fig. 5.

Fig. 4.

Fig. 3.

Fig. 6.



Fig. 21. CRYSTALLOGRAPHY

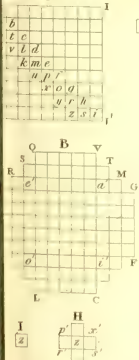
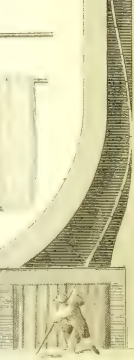
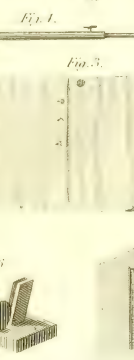
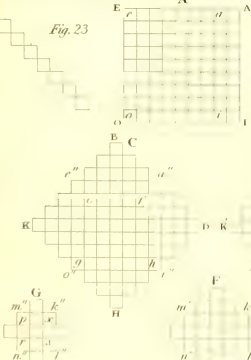


Fig. 23.



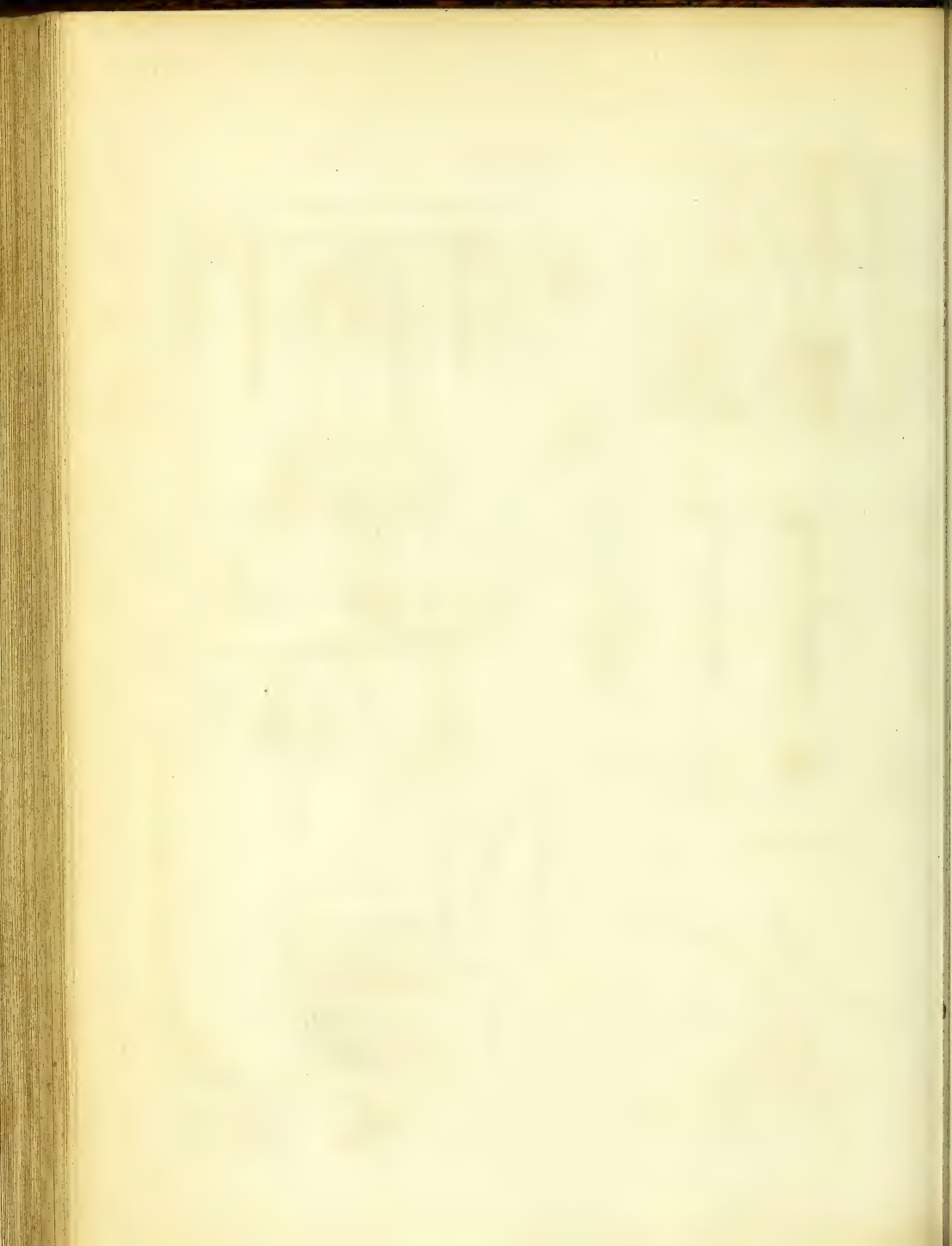


PLATE COINAGE.

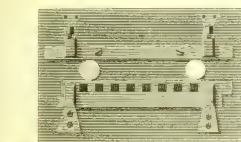


Fig. 2.

Milling.

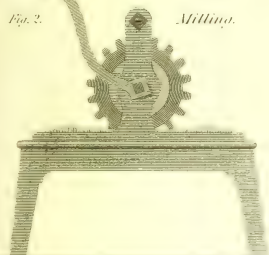


Fig. 1.

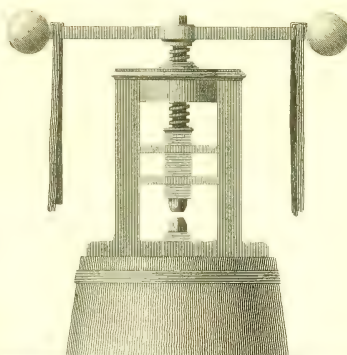


Fig. 3.

MISCELLANY.

COPYING.

Fig. 1. Coinage.

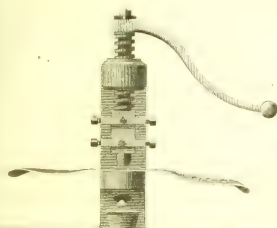
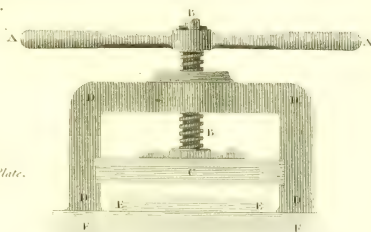


Fig. 3.



For Fig. 4. see the next Plate.

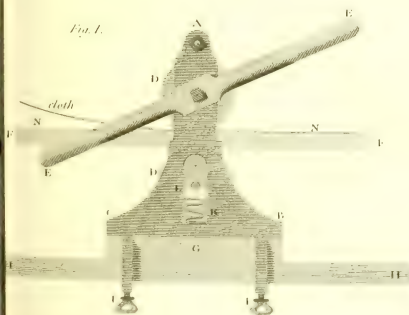


Fig. 1.

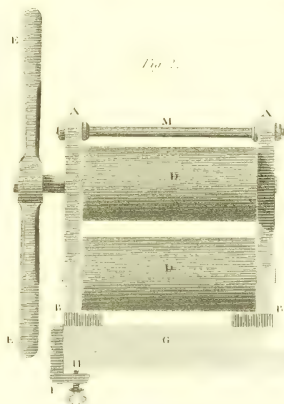
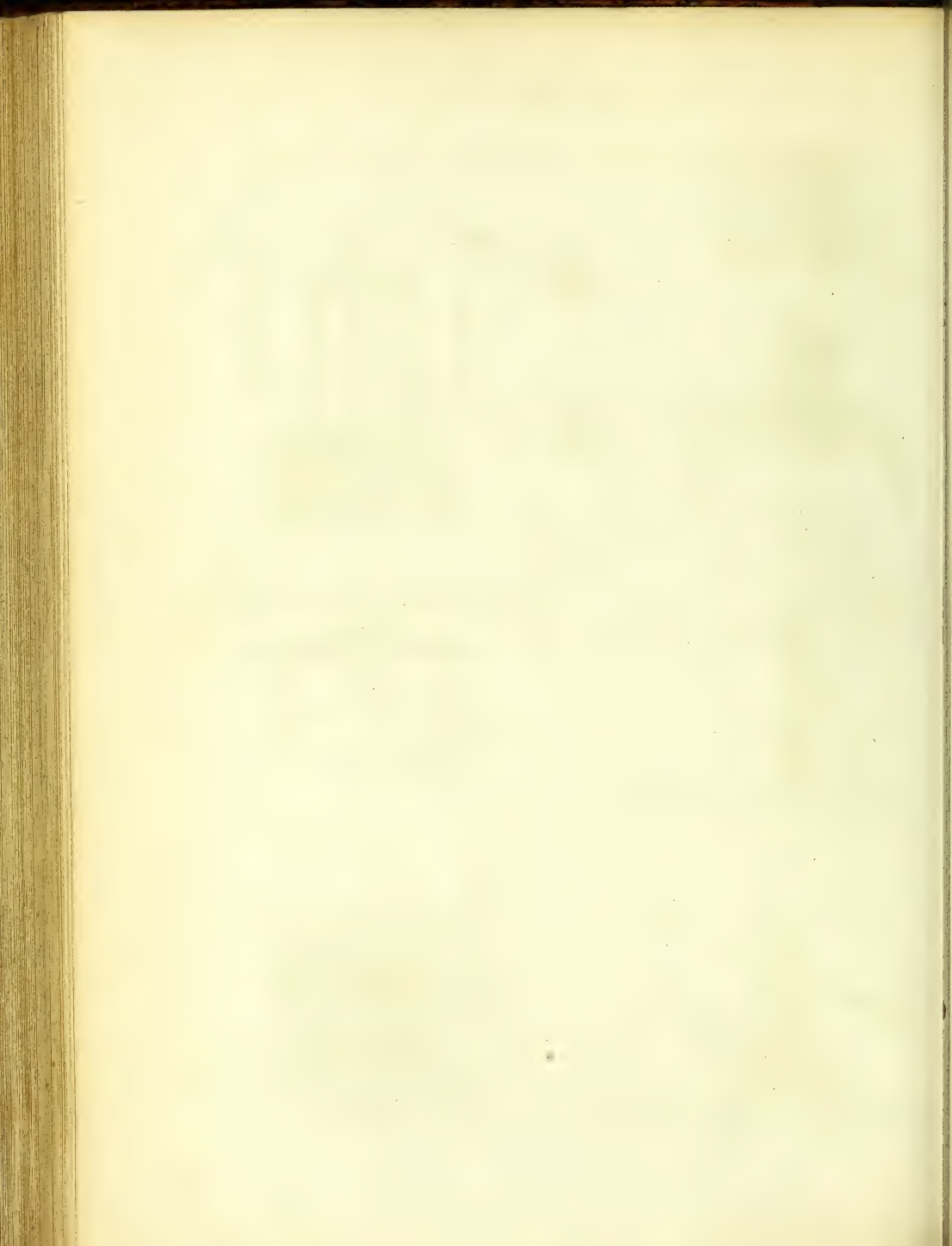


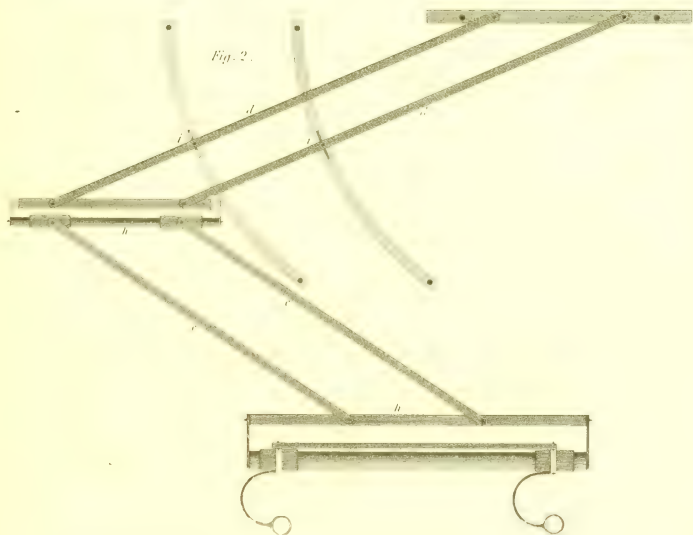
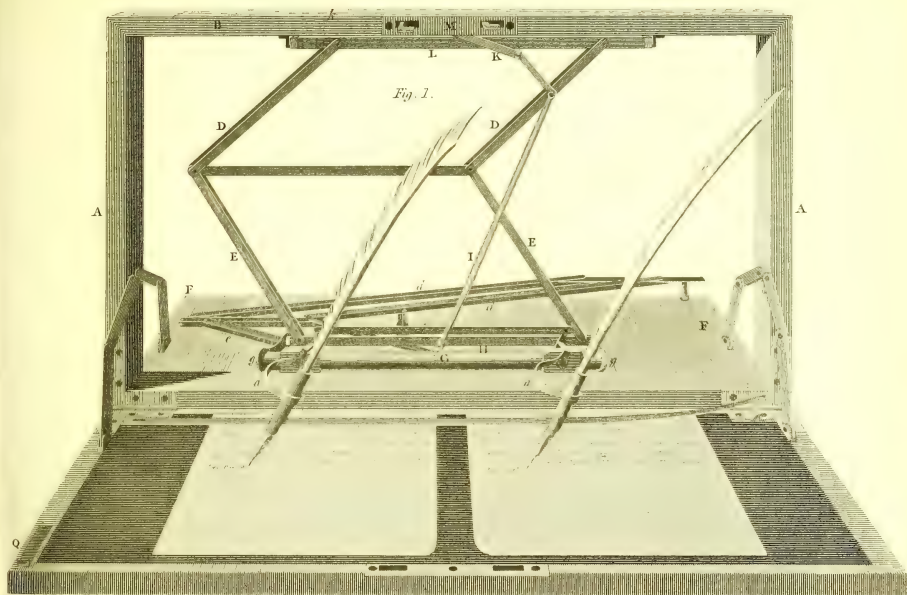
Fig. 2.



MISCELLANIES.

PLATE III.

Hawkins's patent Polygraph.



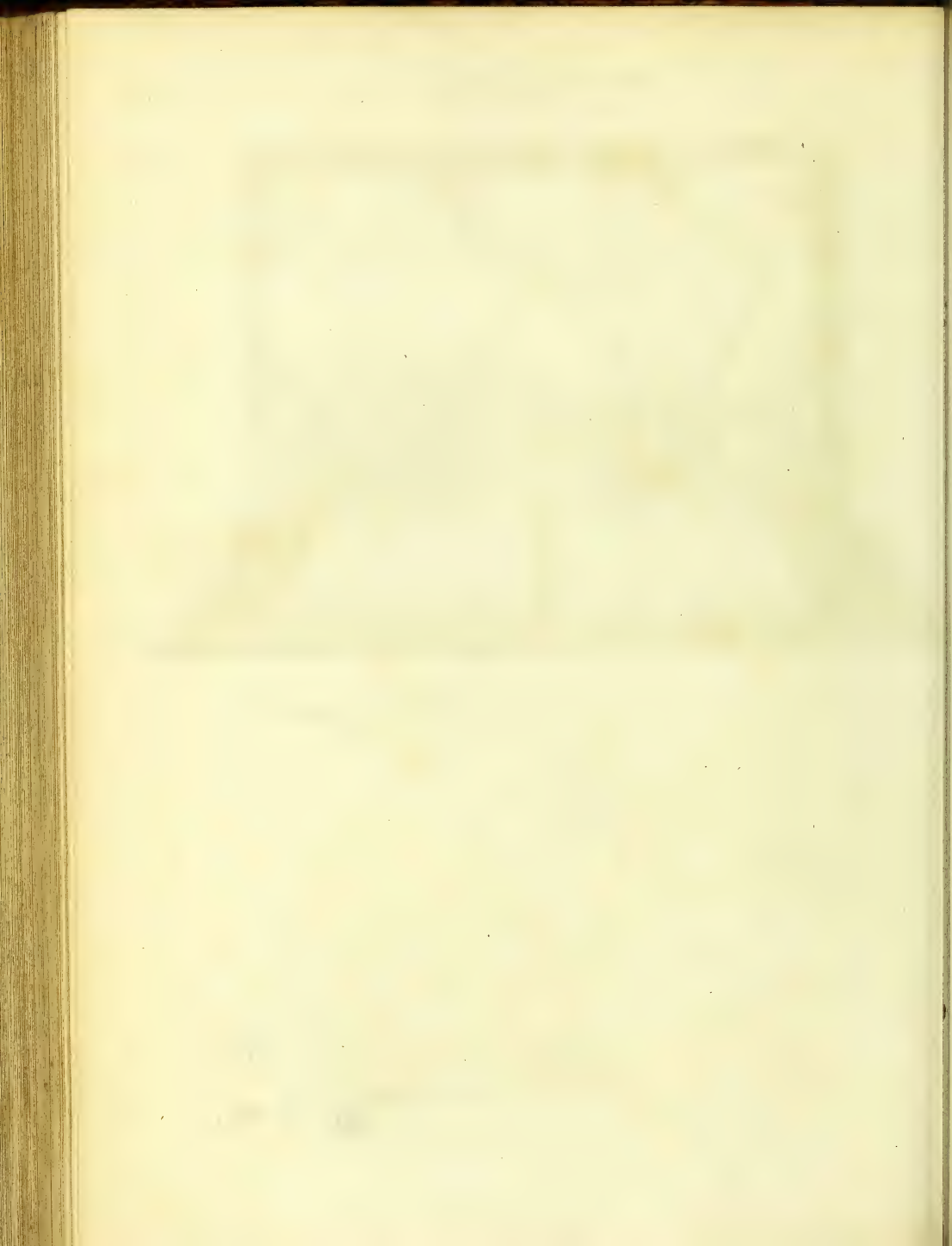


Fig. 7.
Similar Spots

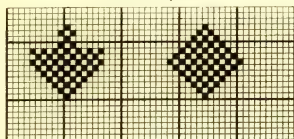


Fig. 8.
Dissimilar Spots

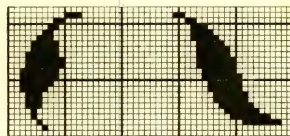


Fig. 9.
Dornrock

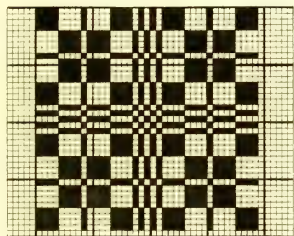


Fig. 10.
Primity

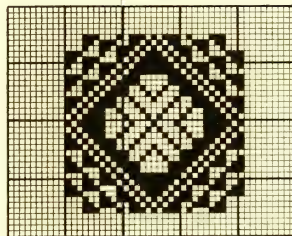
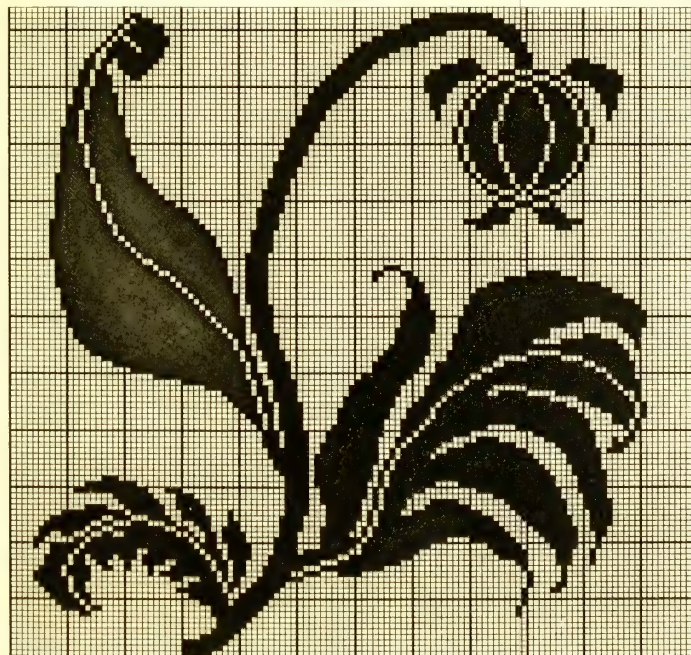


Fig. 11.
Damask



The first of these was the establishment of the
city of Boston in 1630. The second was the
establishment of the city of New York in 1624.
The third was the establishment of the city of
Philadelphia in 1682. The fourth was the
establishment of the city of London in 1666.
The fifth was the establishment of the city of
Paris in 1661. The sixth was the
establishment of the city of Rome in 1644.
The seventh was the establishment of the city of
Vienna in 1683. The eighth was the
establishment of the city of Constantinople in 1657.
The ninth was the establishment of the city of
Moscow in 1648. The tenth was the
establishment of the city of St. Petersburg in 1703.
The eleventh was the establishment of the city of
Berlin in 1698. The twelfth was the
establishment of the city of Vienna in 1683.
The thirteenth was the establishment of the city of
Paris in 1661. The fourteenth was the
establishment of the city of Rome in 1644.
The fifteenth was the establishment of the city of
Vienna in 1683. The sixteenth was the
establishment of the city of Constantinople in 1657.
The seventeenth was the establishment of the city of
Moscow in 1648. The eighteenth was the
establishment of the city of St. Petersburg in 1703.
The nineteenth was the establishment of the city of
Berlin in 1698. The twentieth was the
establishment of the city of Vienna in 1683.
The twenty-first was the establishment of the city of
Paris in 1661. The twenty-second was the
establishment of the city of Rome in 1644.
The twenty-third was the establishment of the city of
Vienna in 1683. The twenty-fourth was the
establishment of the city of Constantinople in 1657.
The twenty-fifth was the establishment of the city of
Moscow in 1648. The twenty-sixth was the
establishment of the city of St. Petersburg in 1703.
The twenty-seventh was the establishment of the city of
Berlin in 1698. The twenty-eighth was the
establishment of the city of Vienna in 1683.
The twenty-ninth was the establishment of the city of
Paris in 1661. The thirtieth was the
establishment of the city of Rome in 1644.
The thirty-first was the establishment of the city of
Vienna in 1683. The thirty-second was the
establishment of the city of Constantinople in 1657.
The thirty-third was the establishment of the city of
Moscow in 1648. The thirty-fourth was the
establishment of the city of St. Petersburg in 1703.
The thirty-fifth was the establishment of the city of
Berlin in 1698. The thirty-sixth was the
establishment of the city of Vienna in 1683.
The thirty-seventh was the establishment of the city of
Paris in 1661. The thirty-eighth was the
establishment of the city of Rome in 1644.
The thirty-ninth was the establishment of the city of
Vienna in 1683. The fortieth was the
establishment of the city of Constantinople in 1657.
The forty-first was the establishment of the city of
Moscow in 1648. The forty-second was the
establishment of the city of St. Petersburg in 1703.
The forty-third was the establishment of the city of
Berlin in 1698. The forty-fourth was the
establishment of the city of Vienna in 1683.
The forty-fifth was the establishment of the city of
Paris in 1661. The forty-sixth was the
establishment of the city of Rome in 1644.
The forty-seventh was the establishment of the city of
Vienna in 1683. The forty-eighth was the
establishment of the city of Constantinople in 1657.
The forty-ninth was the establishment of the city of
Moscow in 1648. The fiftieth was the
establishment of the city of St. Petersburg in 1703.

MISCELLANY.
DIAGONAL MOTION.

PLATE V.

Fig. 1.

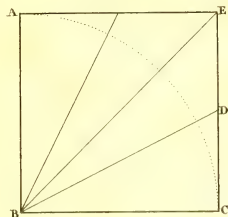


Fig. 2.

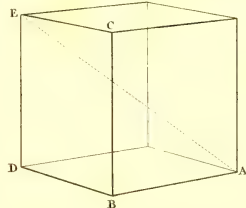


Fig. 3.

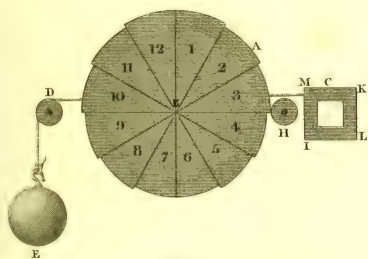


Fig. 4.

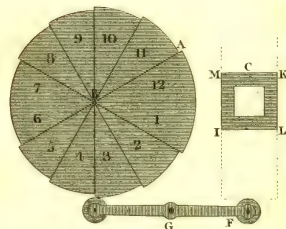


Fig. 5.

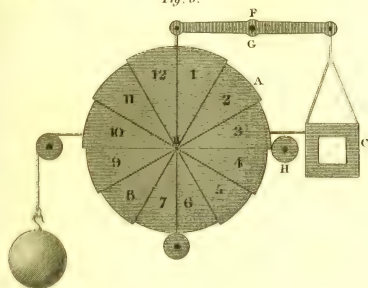


Fig. 6.

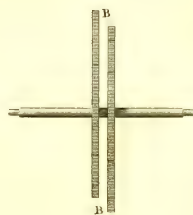


Fig. 7.

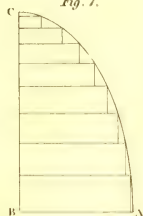
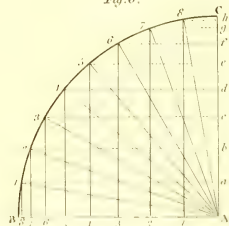
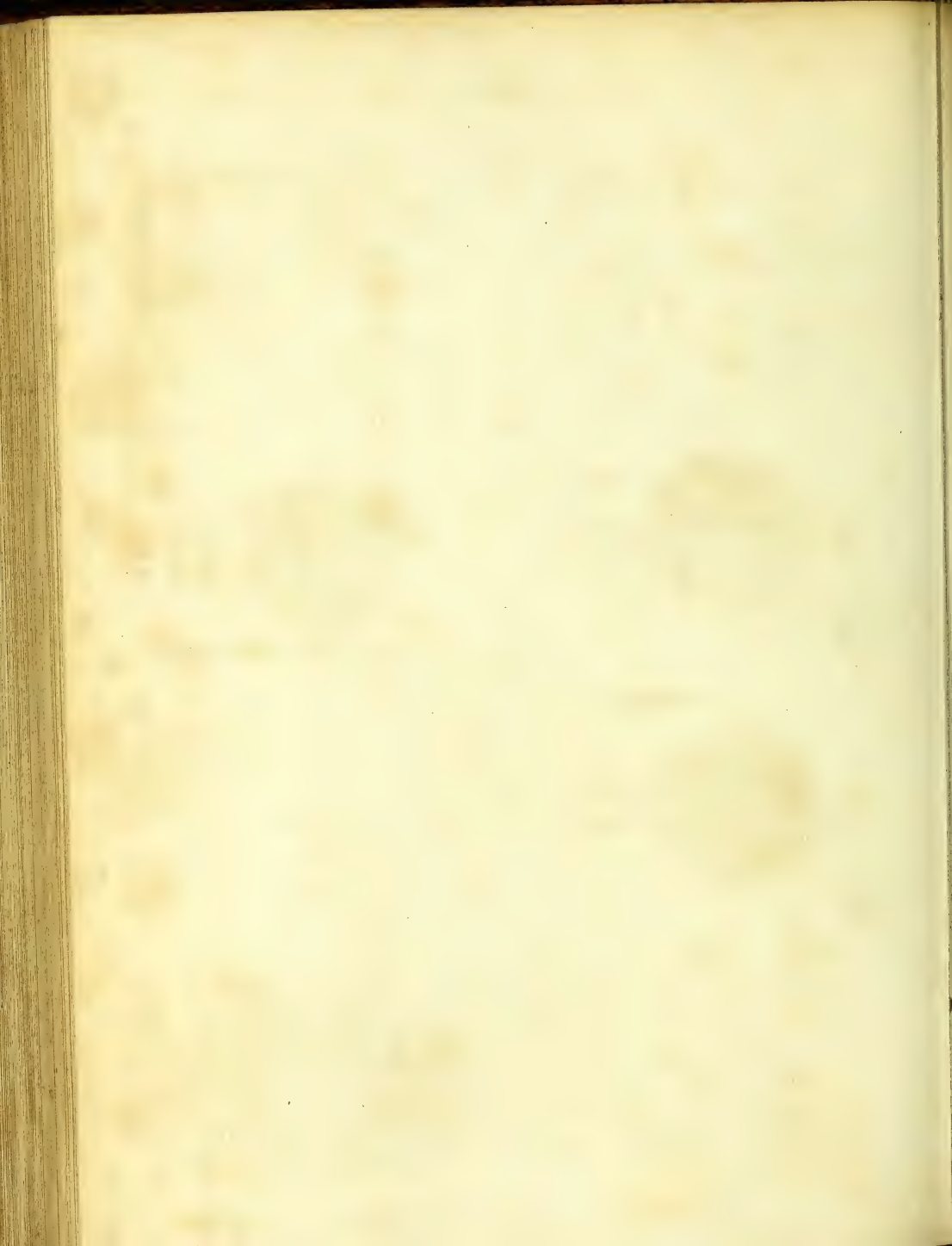


Fig. 8.





DIAGONAL MOTION.
Dividing and Cutting Engine.

Fig. 20.

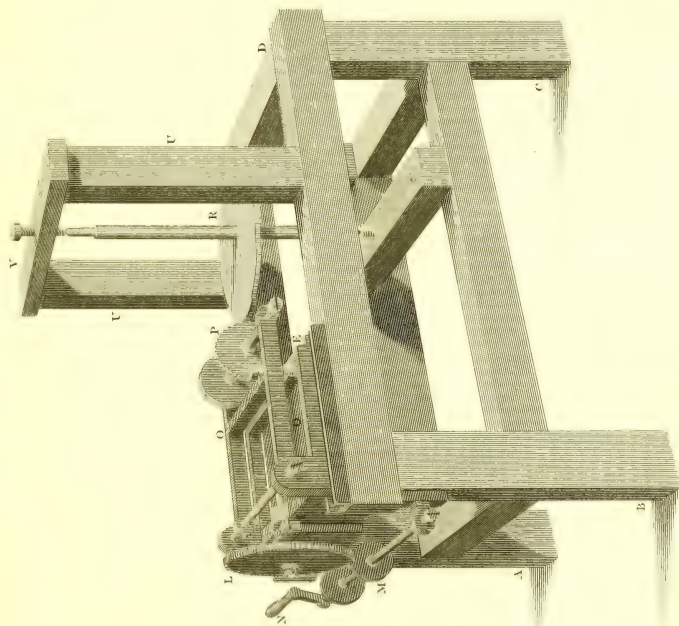


Fig. 19.

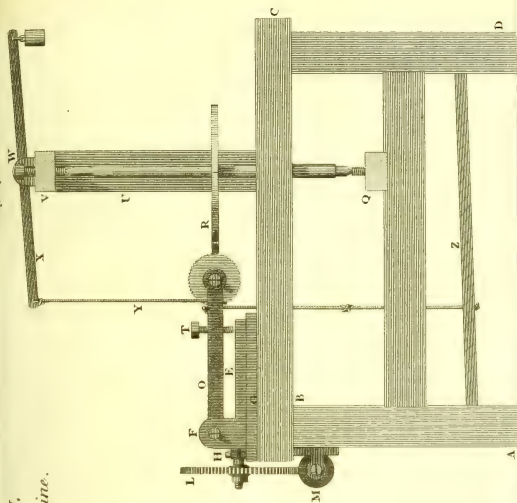
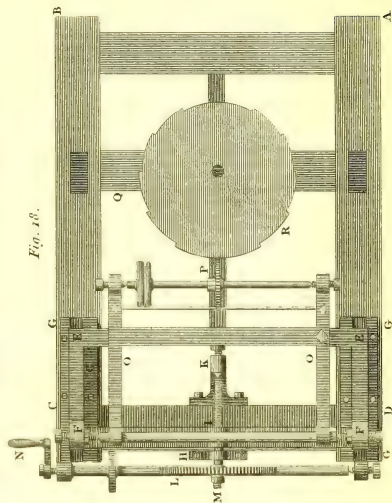


Fig. 18.



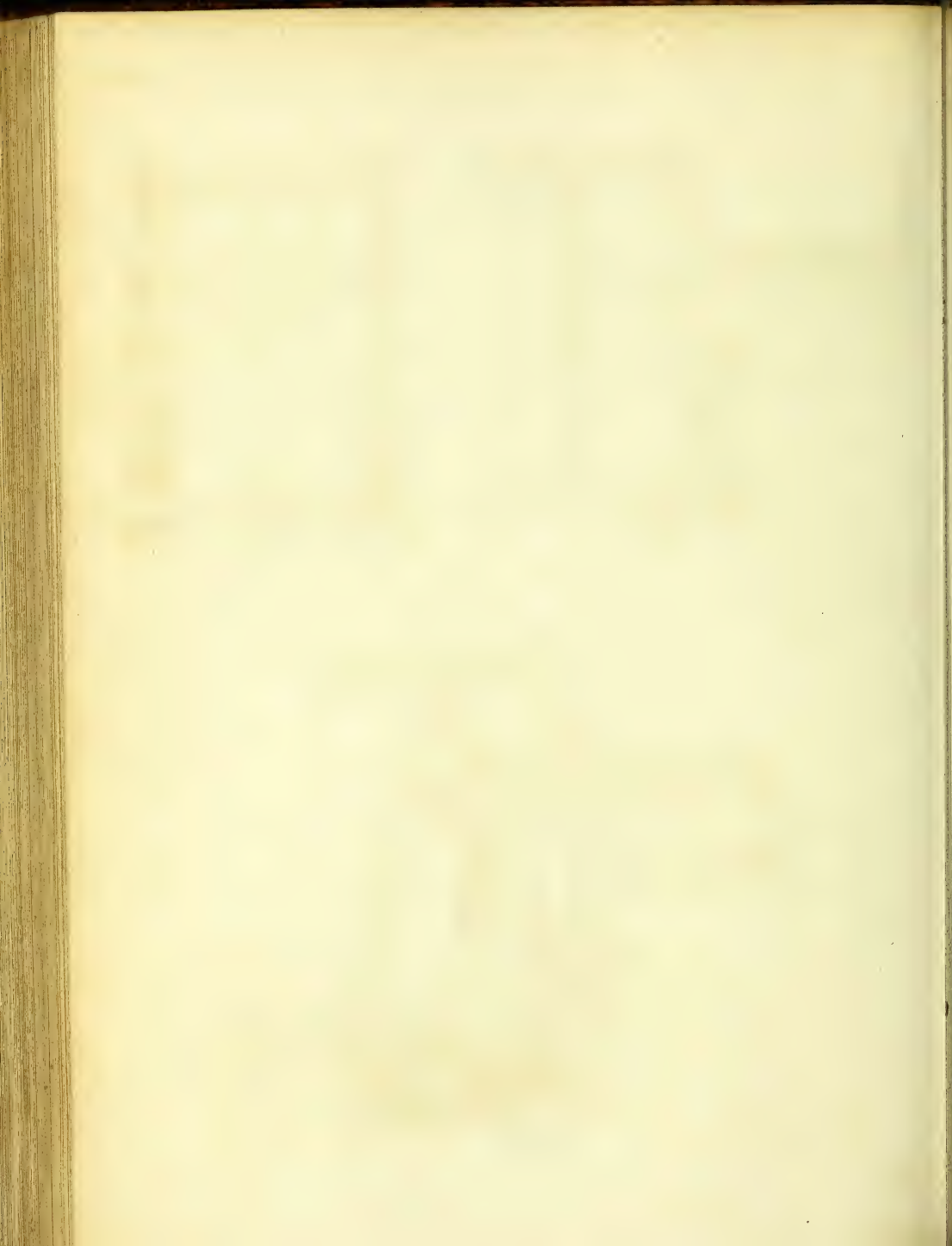


Fig. 1.

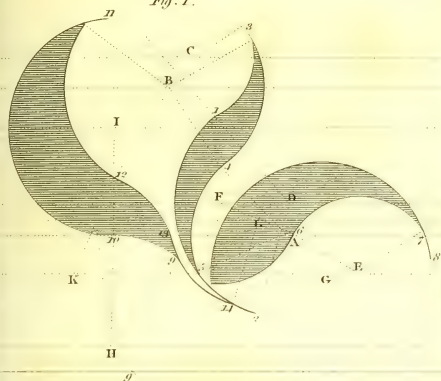


Fig. 2.

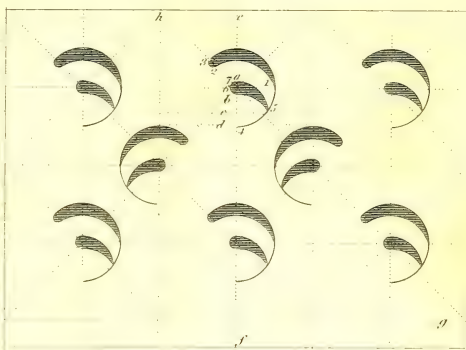


Fig. 3.

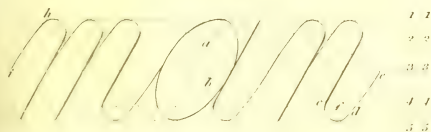


Fig. 4.



Fig. 5.

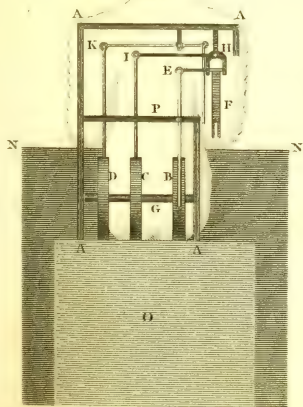
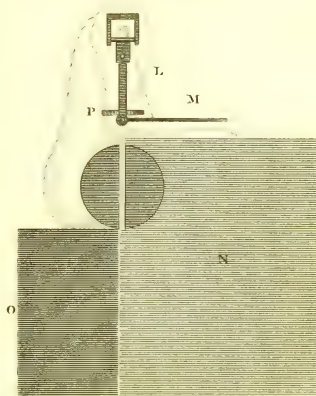


Fig. 6.



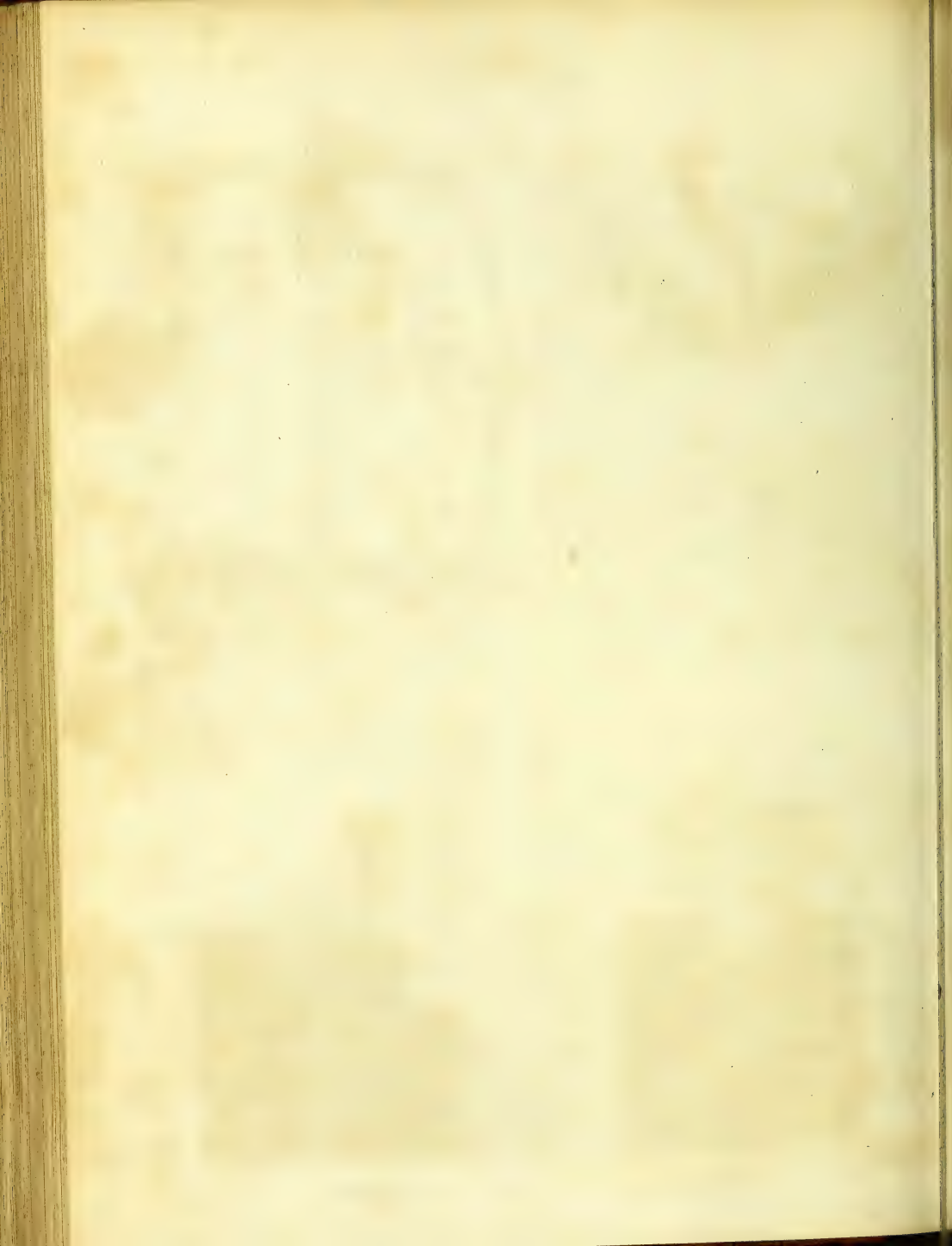




Fig. 1.

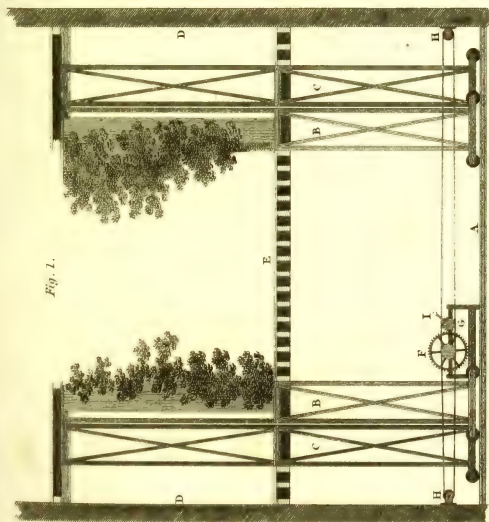


Fig. 1.

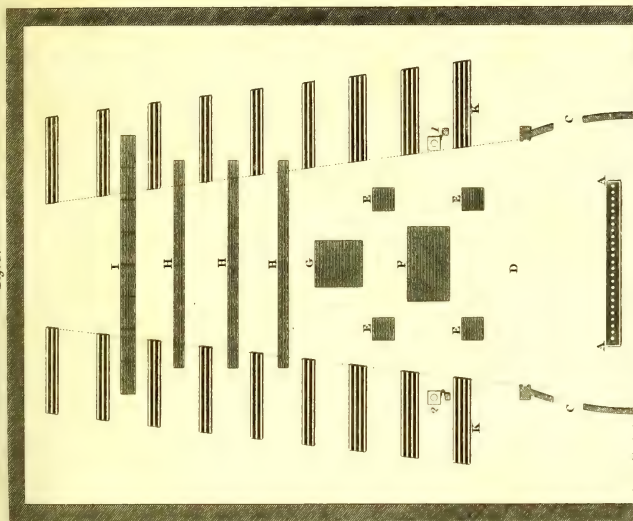


Fig. 3.

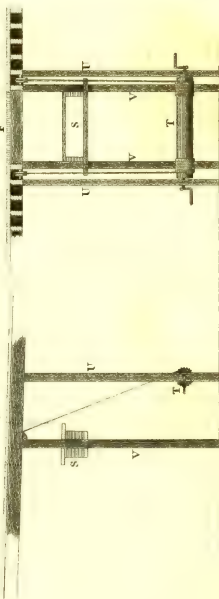


Fig. 4.

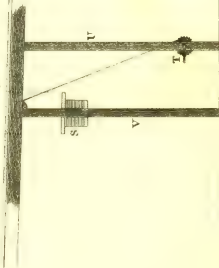
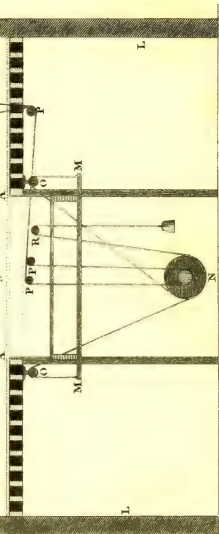


Fig. 2.



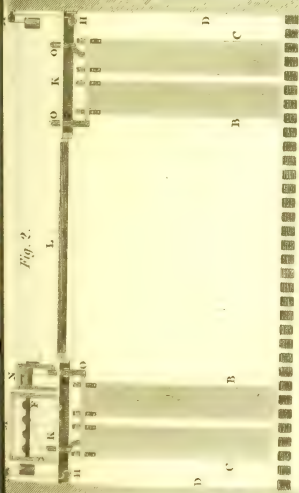


Fig. 2.

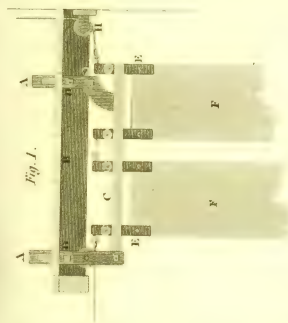


Fig. 1.

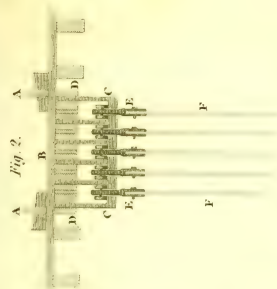


Fig. 2.

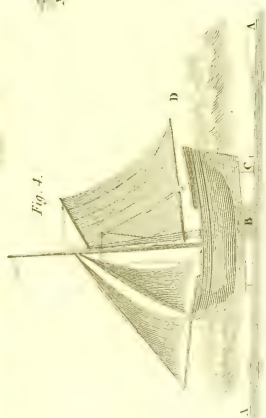


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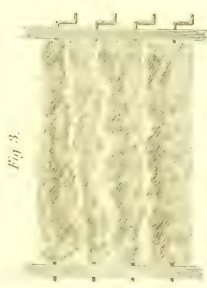


Fig. 3.



Fig. 5.



Fig. 6.

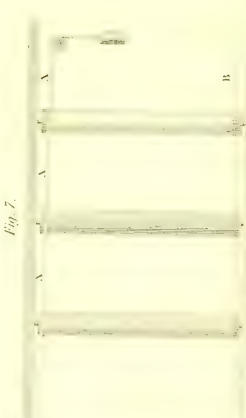
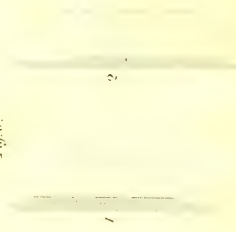


Fig. 7.



Fig. 8.



DRAUGHT AND CORDING OF LOOMS.

Fig. 1.
5 Leaf Tweel

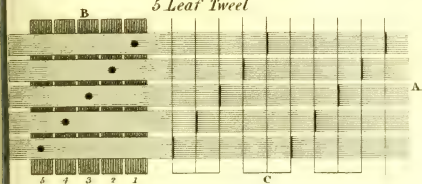


Fig. 2.
Broken Tweel

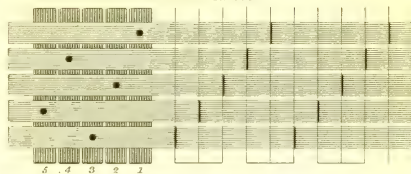


Fig. 3.
8 Leaf Tweel

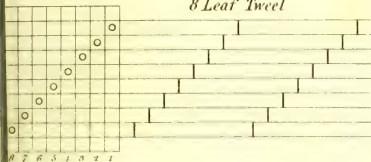


Fig. 4.
Broken Tweel

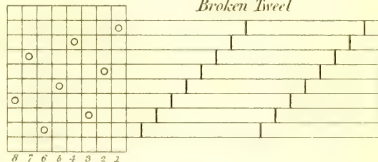


Fig. 5.
Striped Dimity

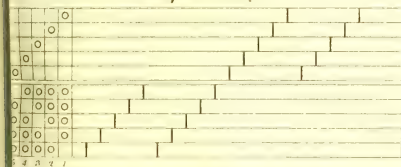


Fig. 6.
Dornock

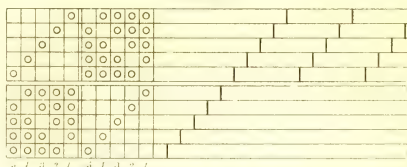


Fig. 7.
Fancy Dimity

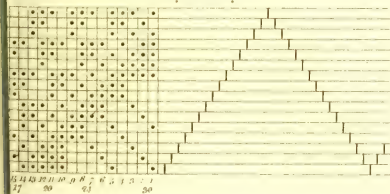


Fig. 8.
Diaper

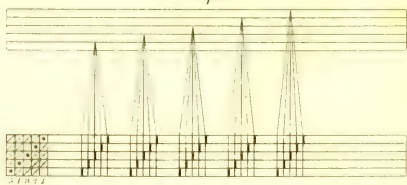


Fig. 9.
Similar Spot

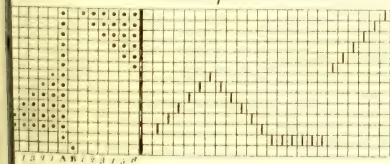
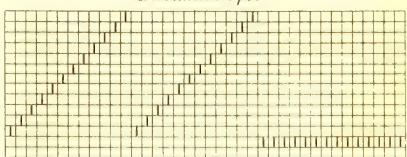
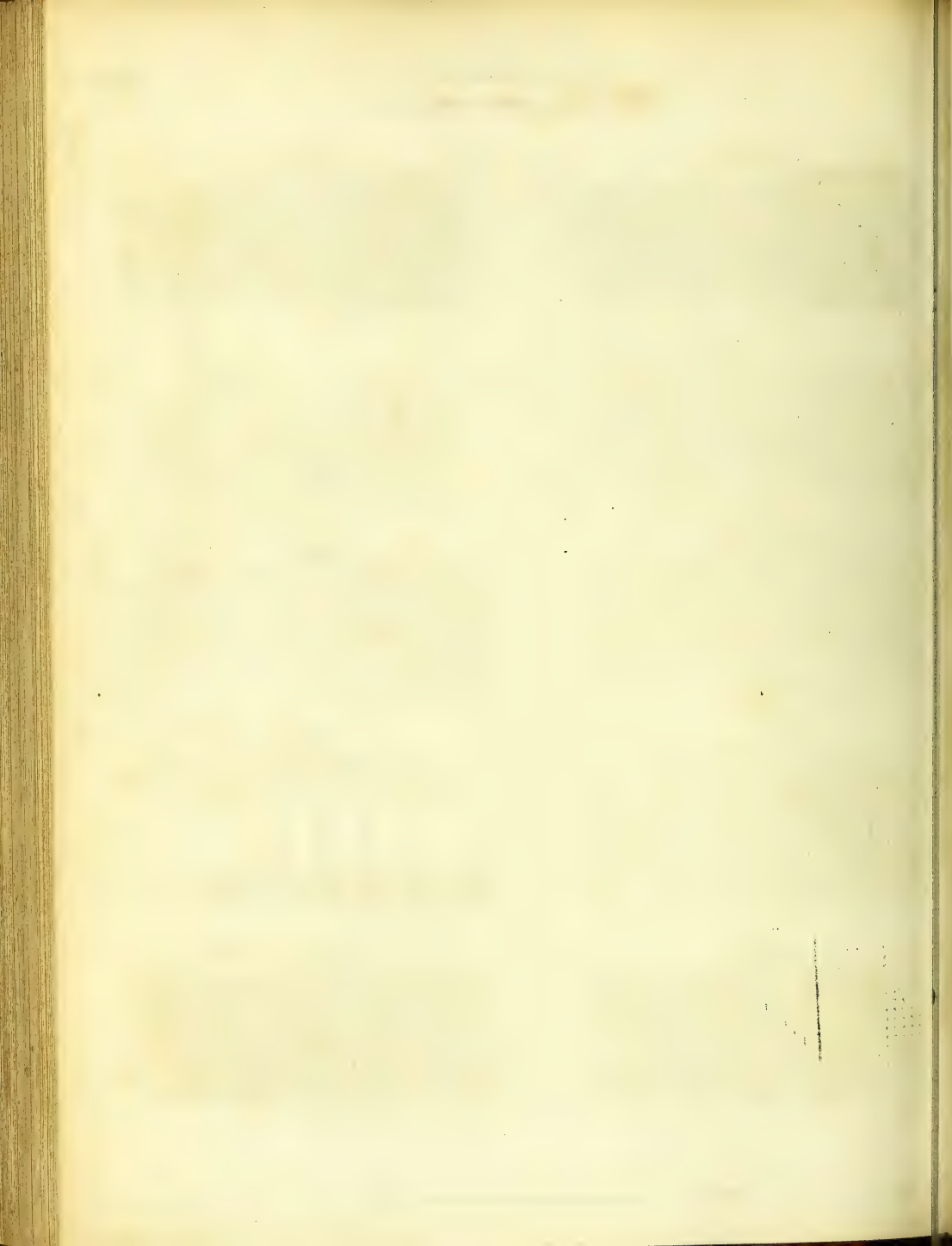


Fig. 10.
Dissimilar Spot





MISCELLANIES.

PLATE

Mr. Marshal's Secret Escutcheon for a Key Hole.

Fig. 1.

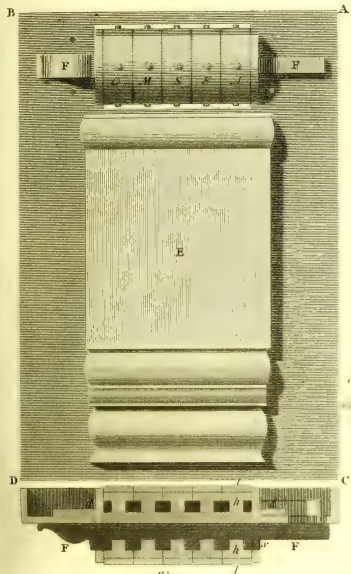


Fig. 4.

Fig. 5.



Fig. 6.



Fig. 7.

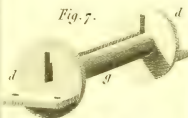


Fig. 8.



Fig. 2.

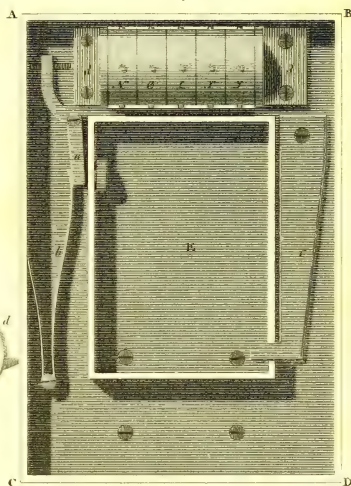
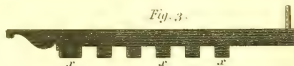
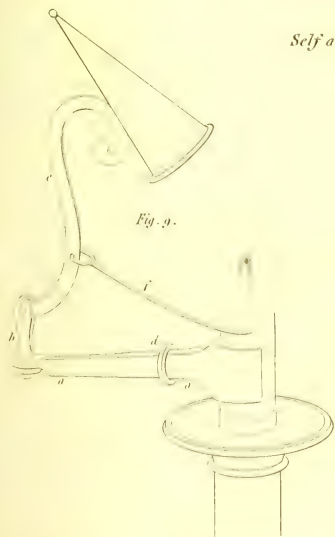


Fig. 3.



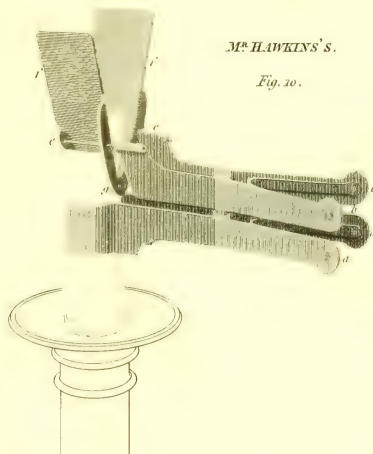
Self acting Extinguishers.

Fig. 9.



MR. HAWKINS'S.

Fig. 10.



*M^r Masere's
Original suspension.*



Fig. 11.

*M^r Masere's, FIRE ESCAPE
Simplified by M^r Forster.*

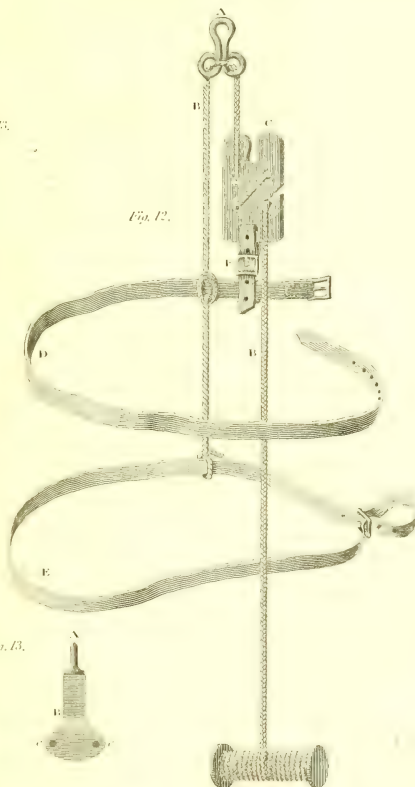


Fig. 12.

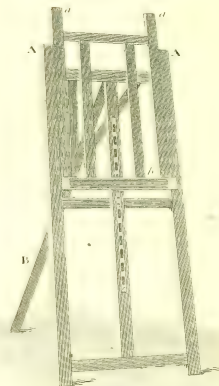


Fig. 13.



Painters' EASEL.

Fig. 1.



Indigo

Fig. 1.

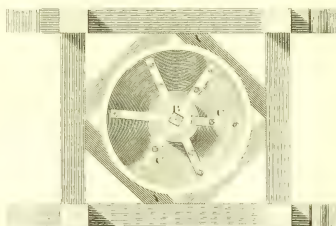


Fig. 2.

*INDIGO
Mills.*

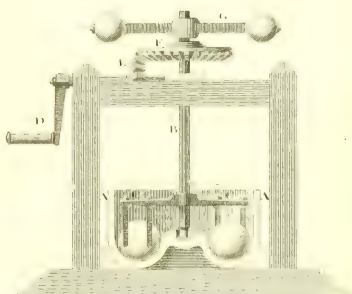
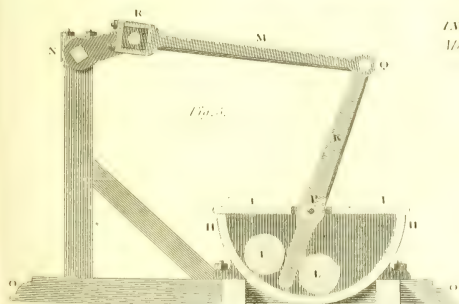
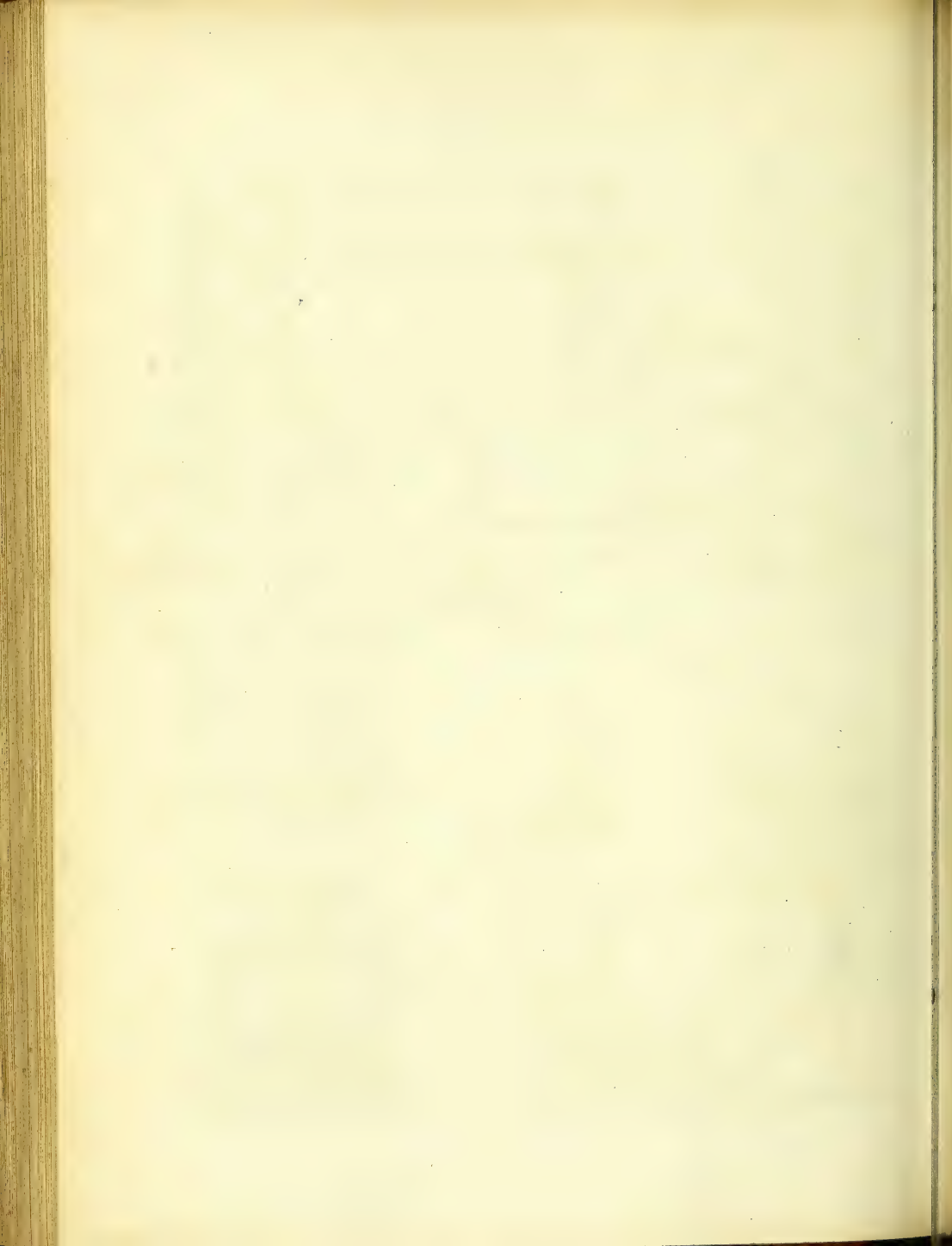


Fig. 3.





FILE CUTTING.

PLATE XIII.



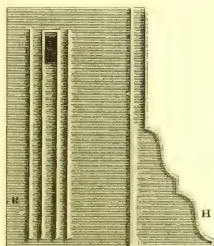
FILTERS



FIRE PLACE by D^r FRANKLIN.

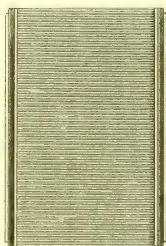
Side Plate

N^o 3.



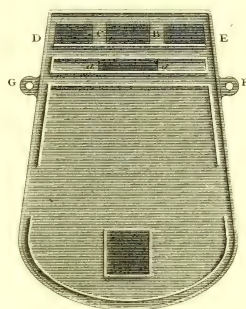
Back Plate

N^o 2.



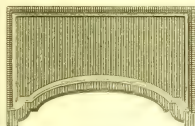
Bottom Plate

Fig. 2. N^o 1.



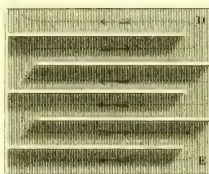
Front Plate

Fig. 5.



Air Box

Fig. 4.



Ledges

Fig. 3.



Top Plate

N^o 6.



Fig. 6.

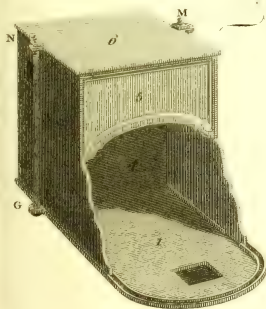
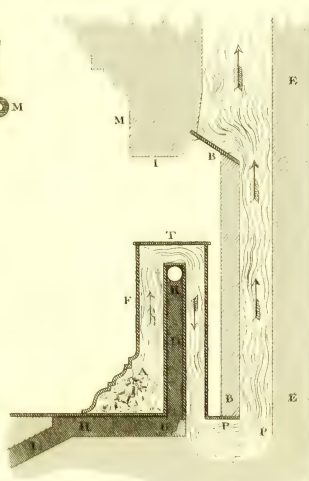
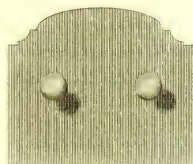


Fig. 7.



Shutter

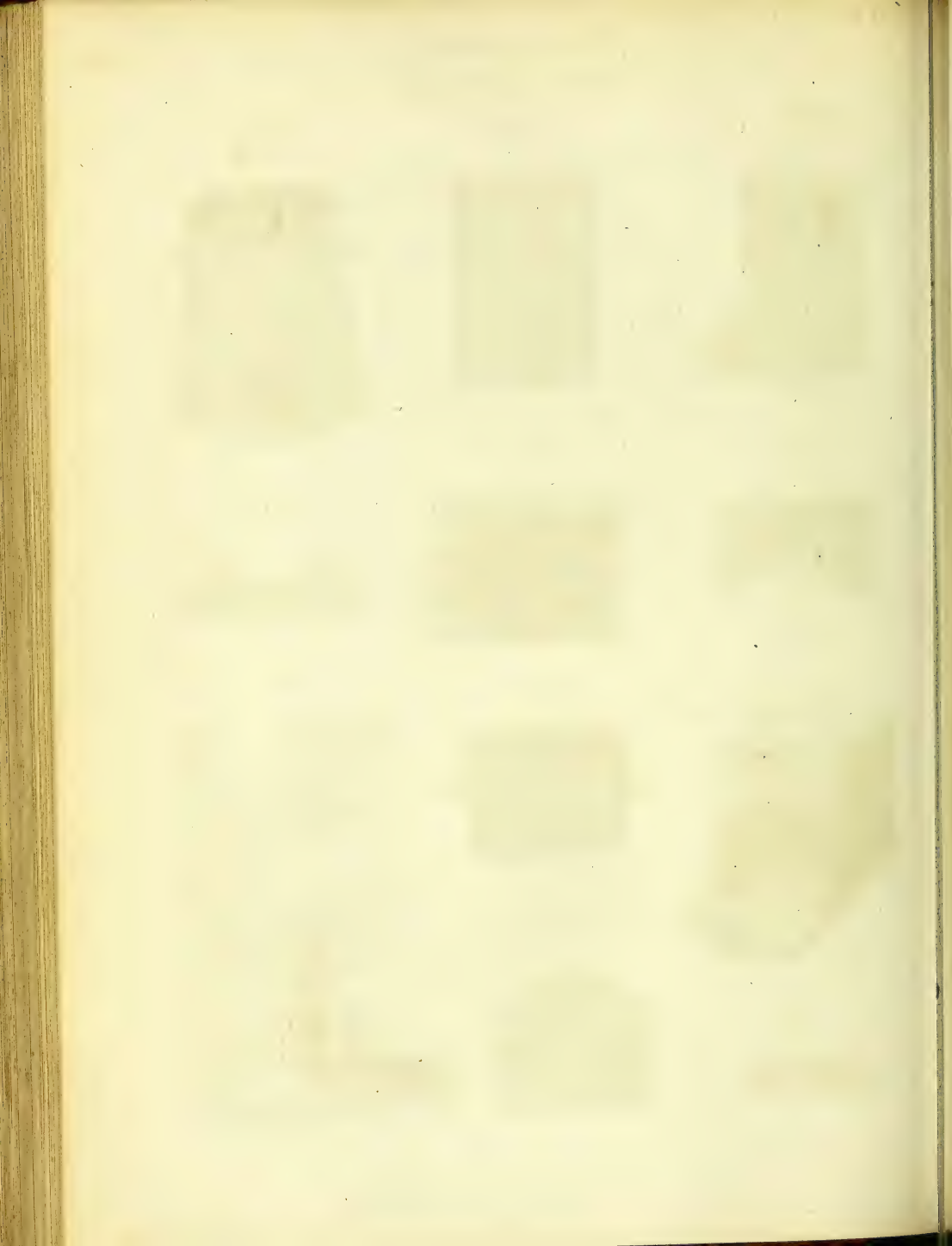
N^o 7.



Register

N^o 8.





Hawkins's Claviote or FINGER Keyed Viol.

Fig. 1.

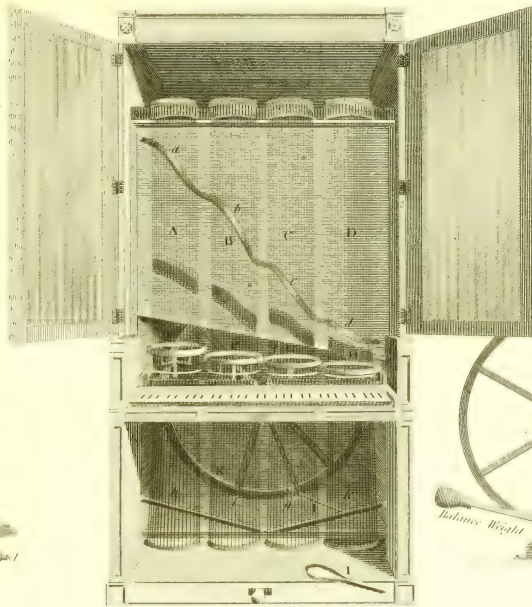
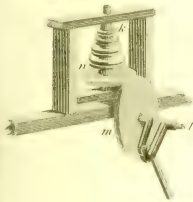


Fig. 5 or 7



Foot Wheel & Balance.

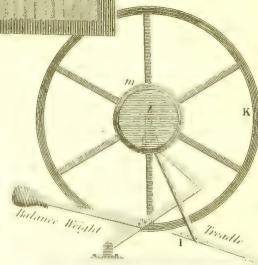


Fig. 3.

Fig. 2.

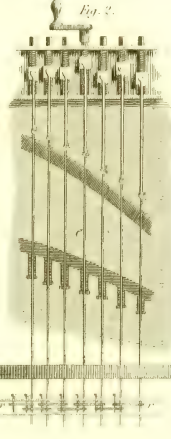


Fig. 1.

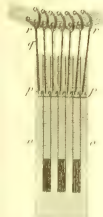


Fig. 3 or 5.

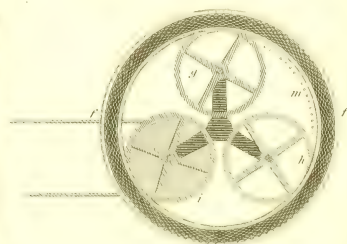
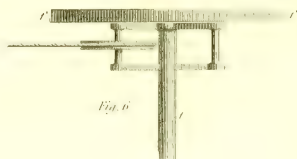
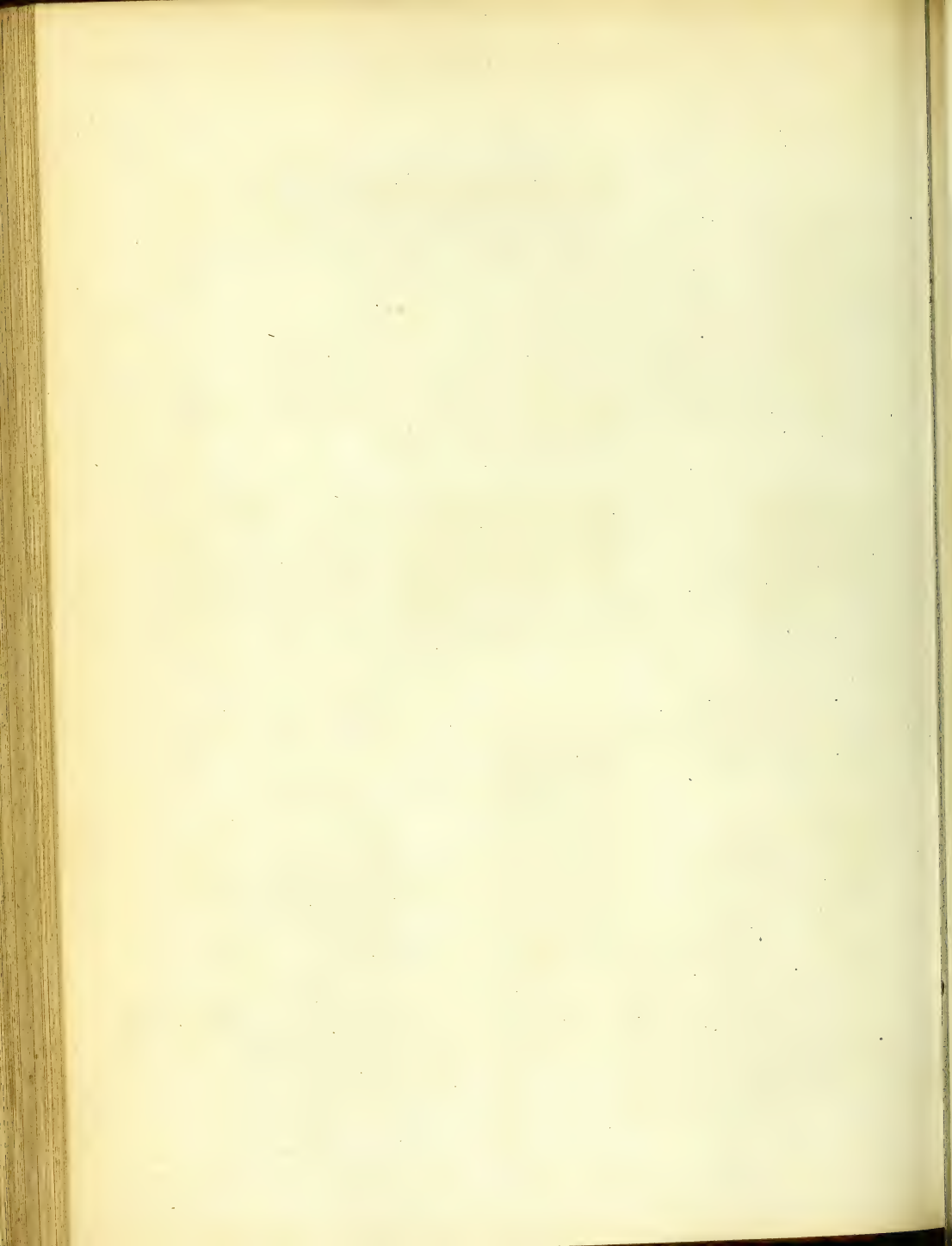


Fig. 6





FLOOD GATES.

Smeaton's.
Fig. 5. 6. Plan.

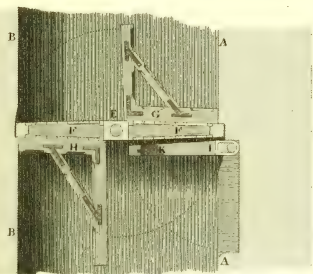


Fig. 2. Elevation.

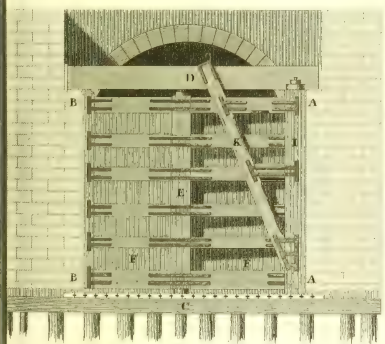


Fig. 7. Self acting Flood Gate by M^r Farry.

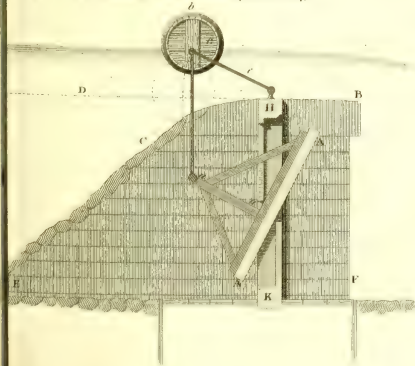
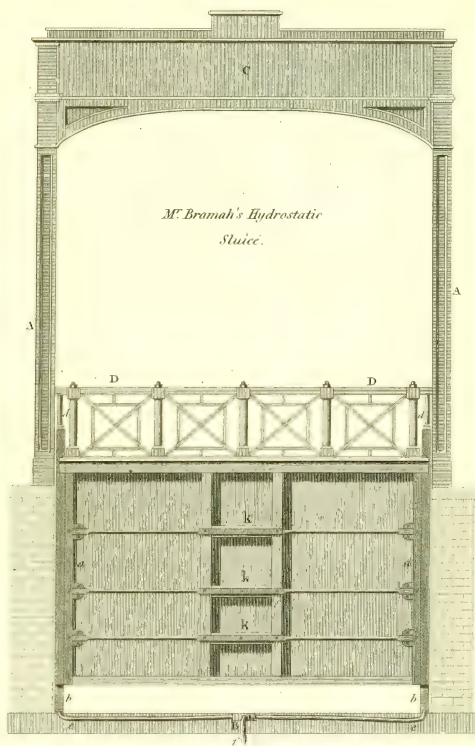


Fig. 8.



M^r Bramah's Hydrostatic
Sluice.

Fig. 9.



Fig. 11.

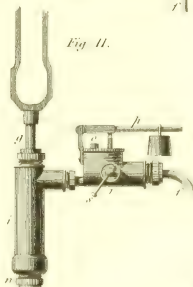
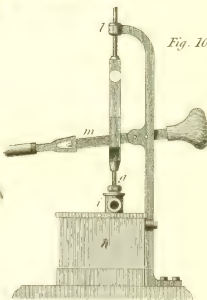
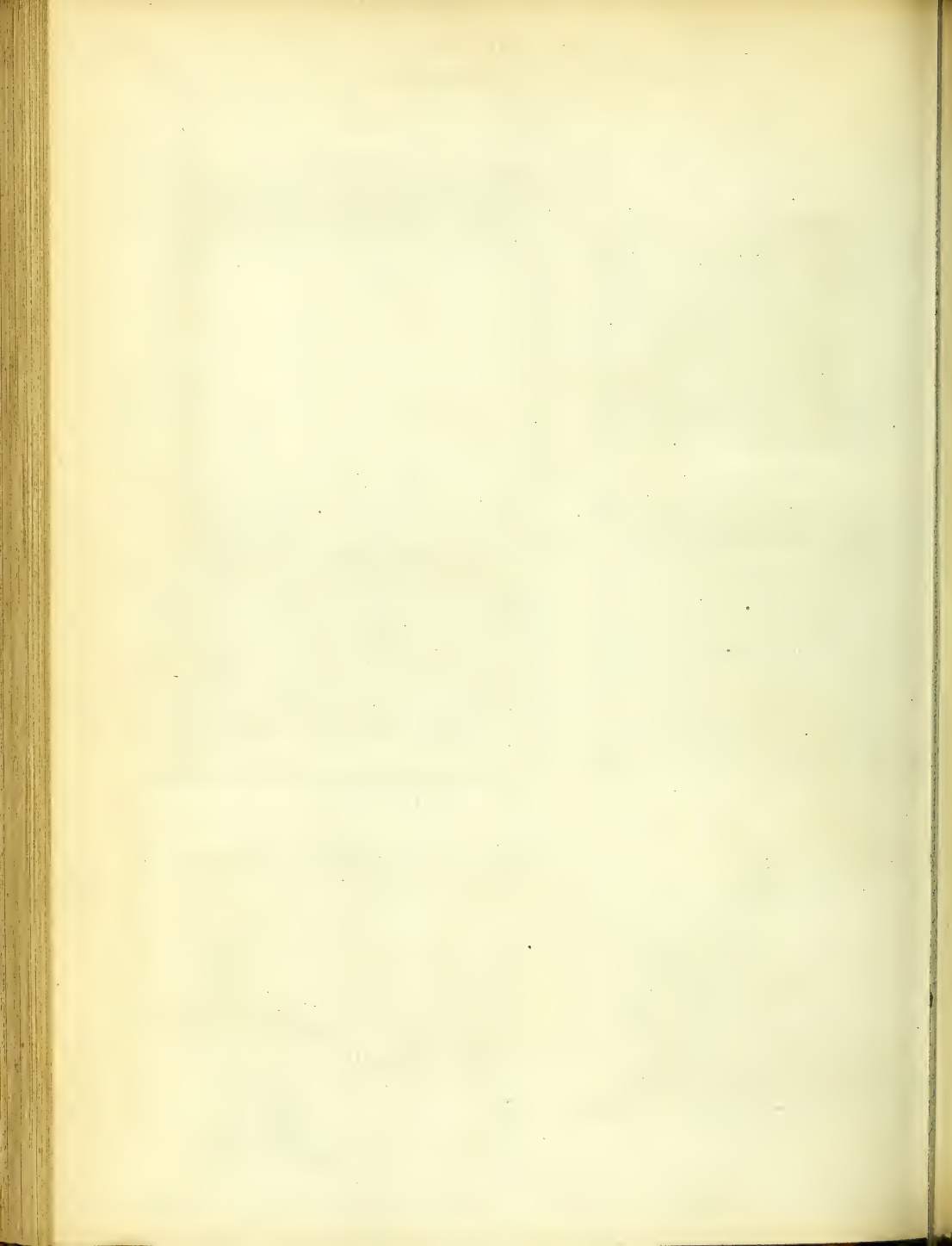
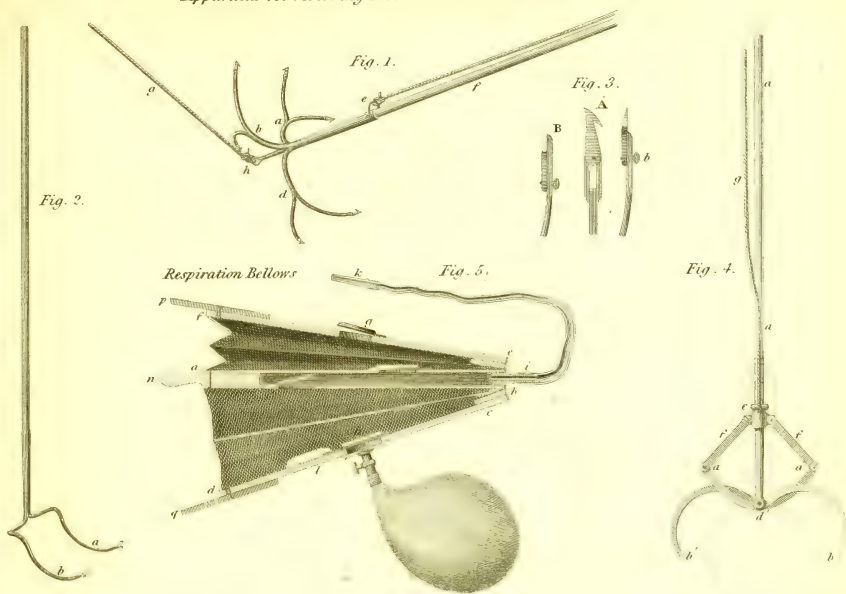


Fig. 10.



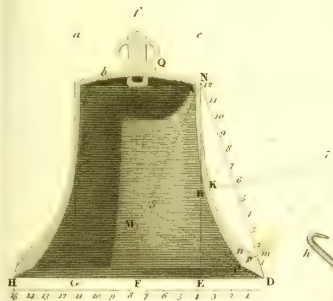


Apparatus for restoring those DROWNING to life.



FOUNDRY of BELLS.

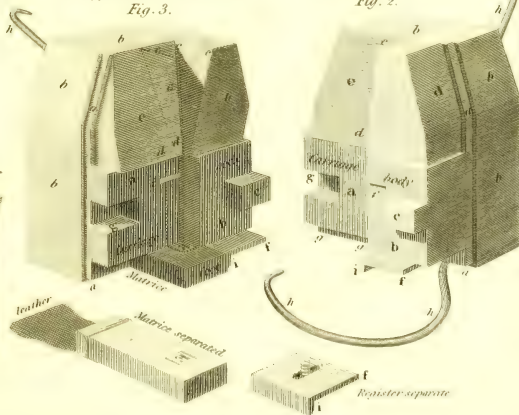
Fig. 1.



FOUNDRY of LETTERS or TYPES.

Upper half of Mould
Fig. 3.

Under half of Mould.
Fig. 2.



Flat Gauge

A Type
when cast

Italic Gauge

jet

leather

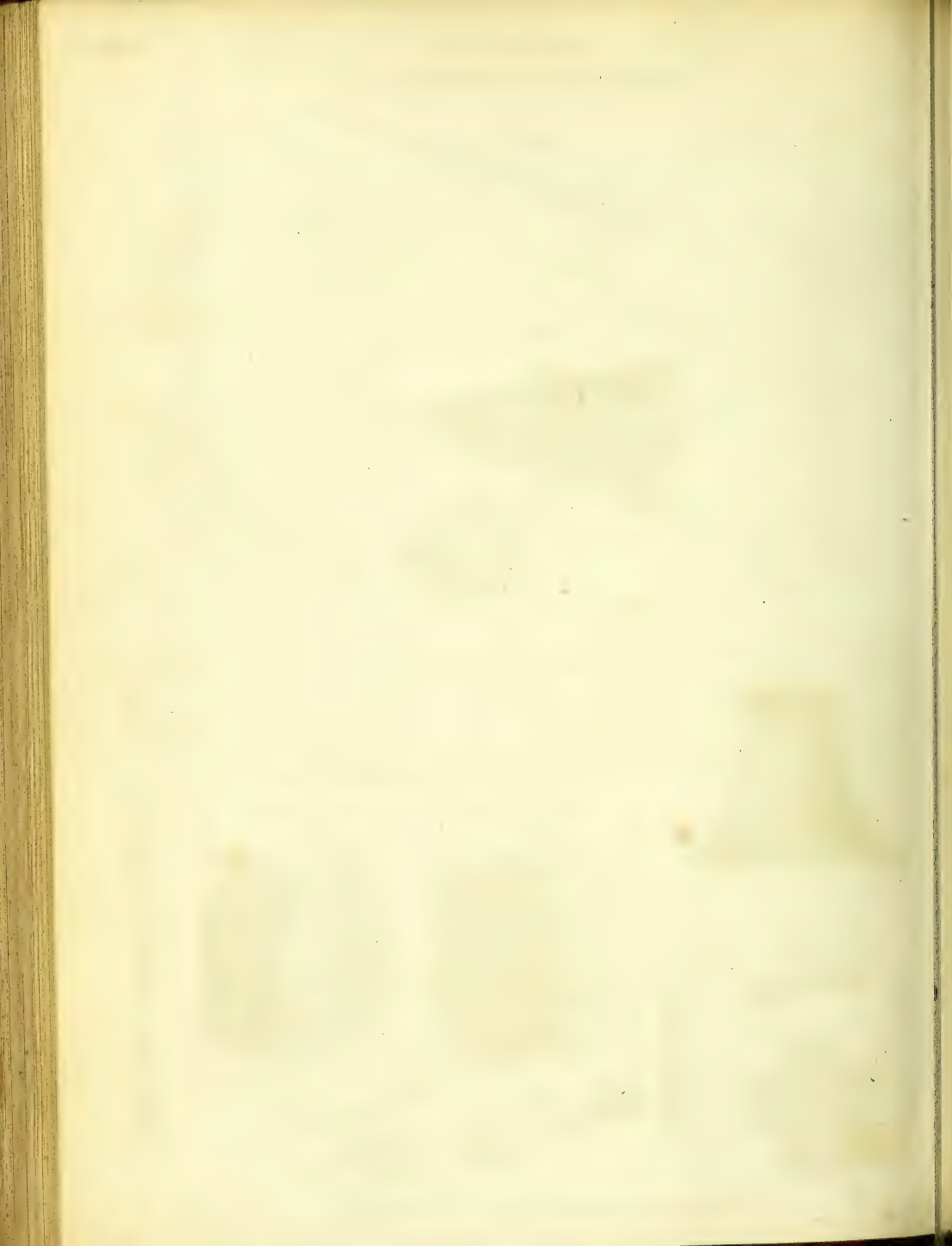
Matrix separated

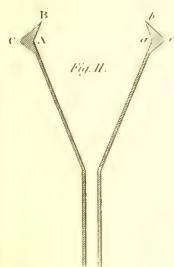
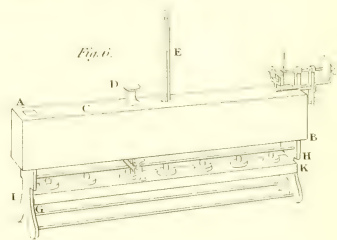
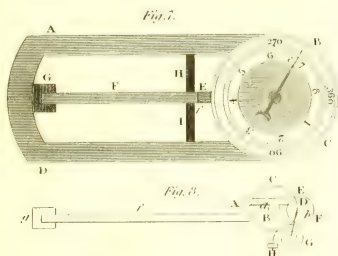
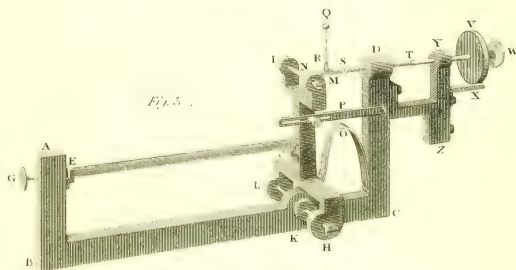
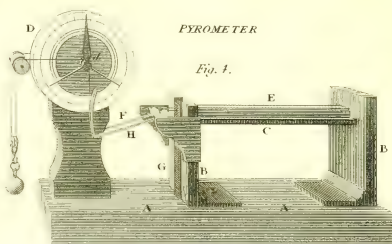
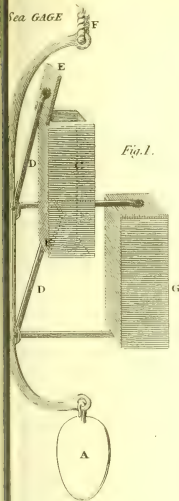
letter

Register separate

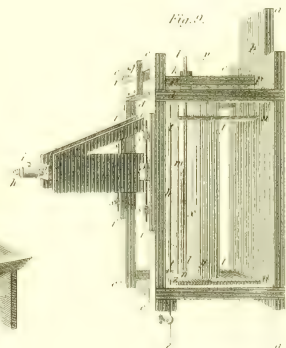
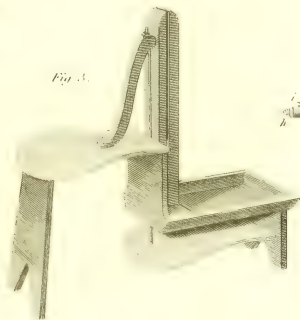
FOUNTAIN Pen, Fig. 4.

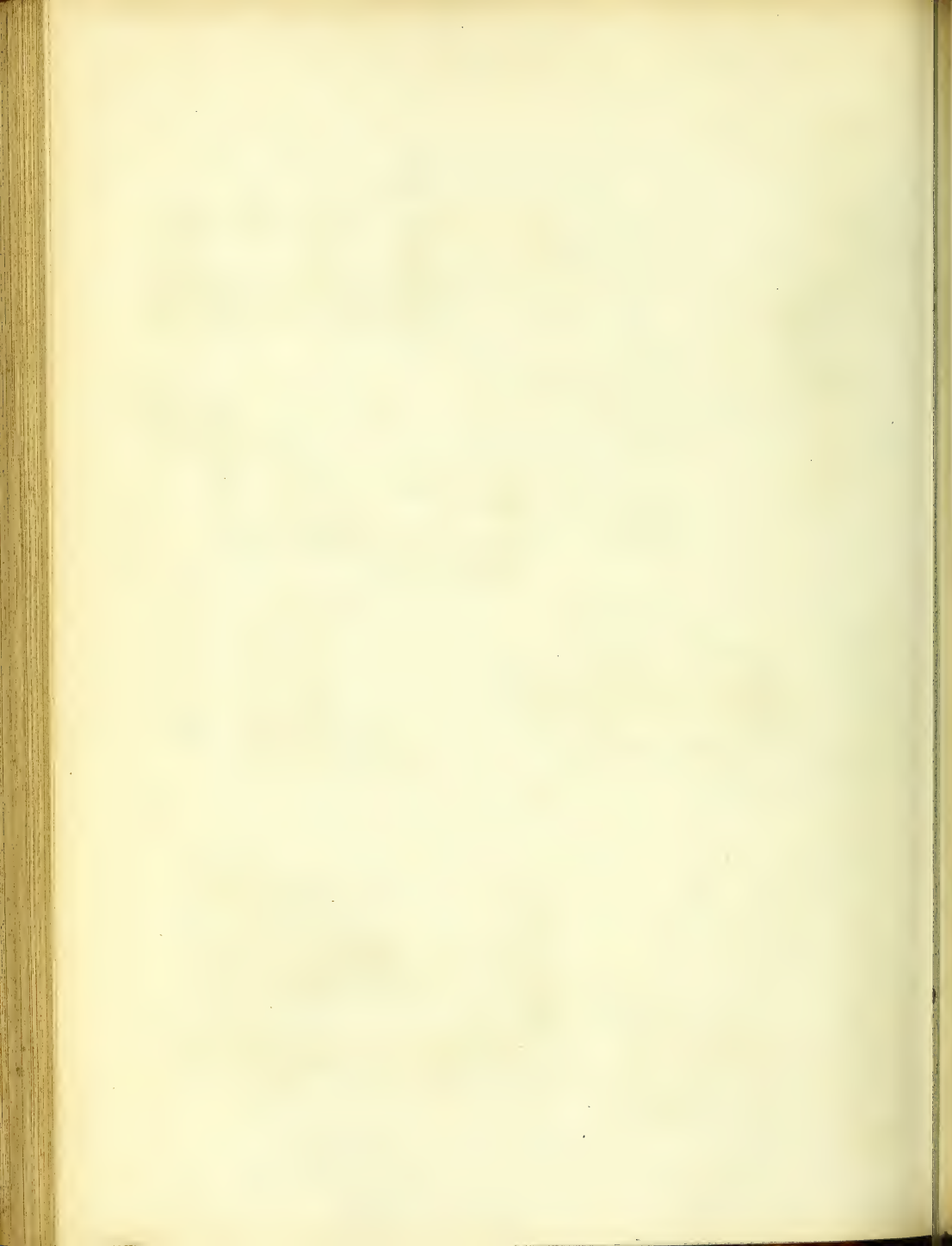






MARQUETRY





MISCELLANY.
GAS LIGHTS.

PLATE XVII.

Fig. 1. *Mc Clell's Apparatus.*

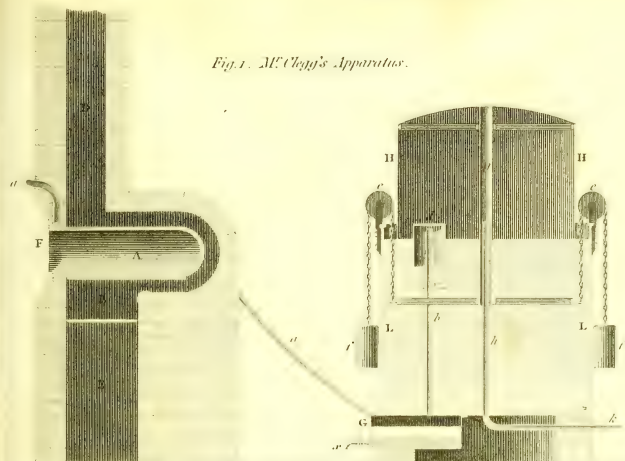


Fig. 2



Fig. 3

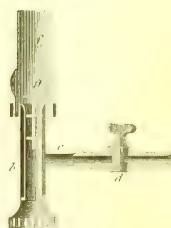


Fig. 4. *Dr Standlä's Apparatus.*

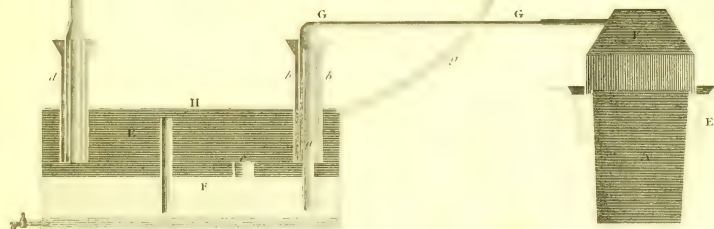
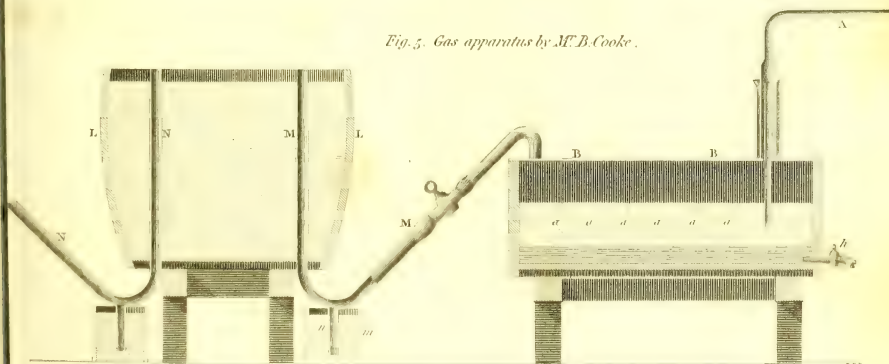
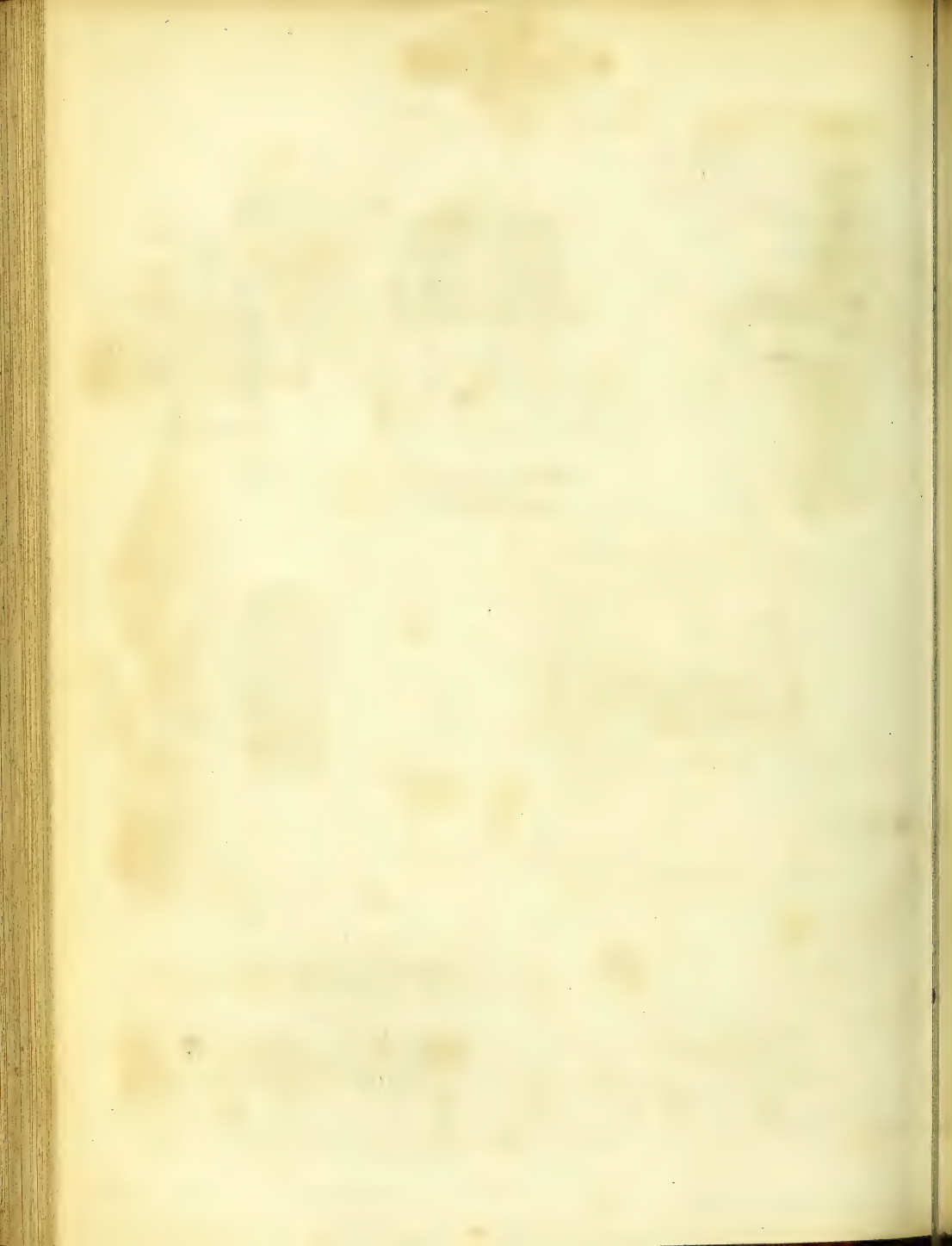


Fig. 5. *Gas apparatus by M^r B. Cooke.*





GEM Engraving.

Fig. 2.



Fig. 3.



Fig. 4.

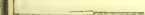


Fig. 5.

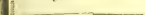


Fig. 6.



Fig. 10.



Fig. 11.



Fig. 12.



Fig. 1.

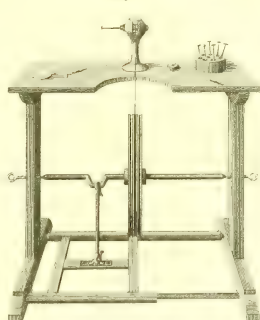


Fig. 7.



Fig. 8.



Fig. 9.



Fig. 16.

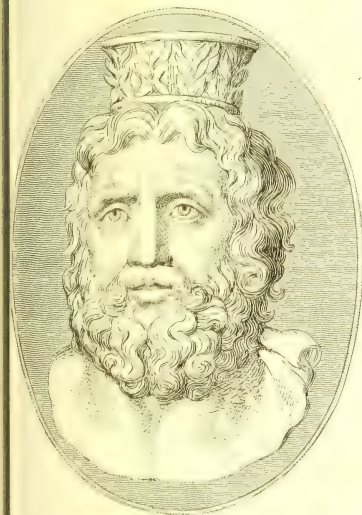


Fig. 14.

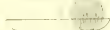


Fig. 15.



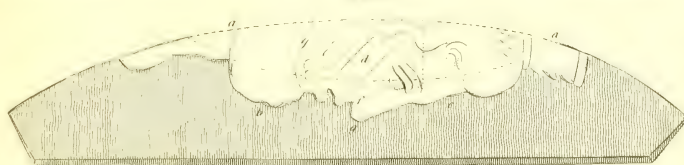
Fig. 13.

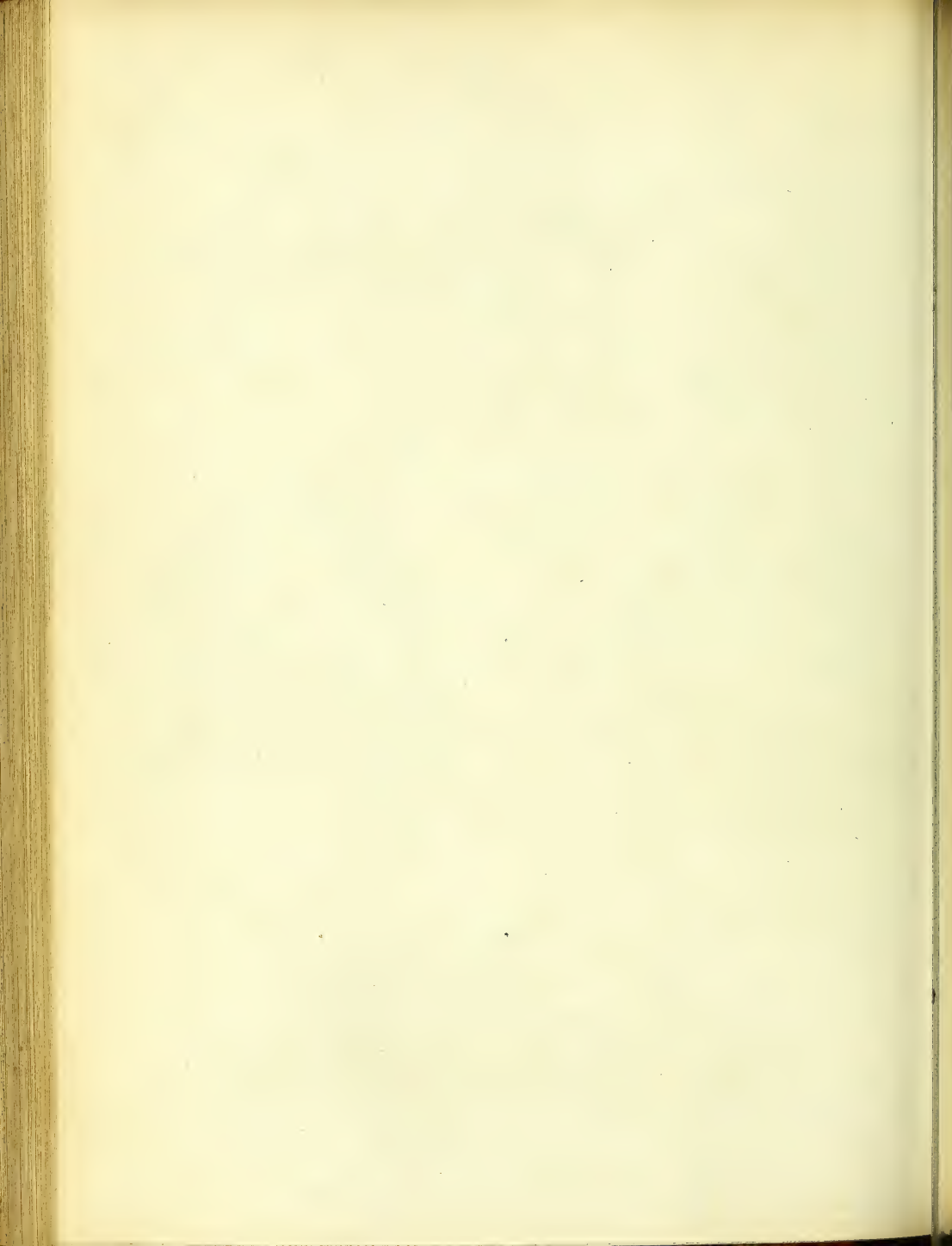


Fig. 17.



Fig. 18.

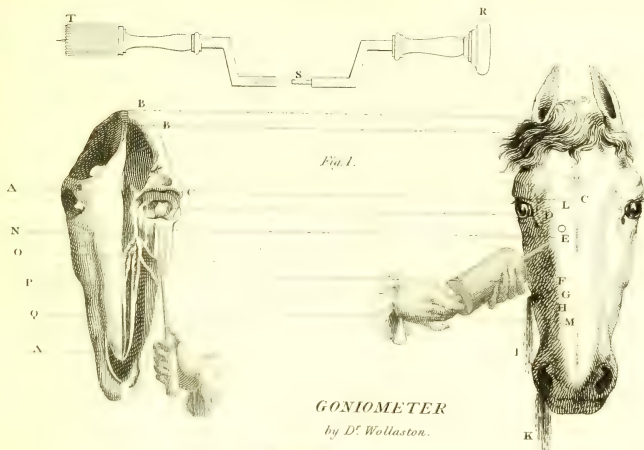




MISCELLANY.

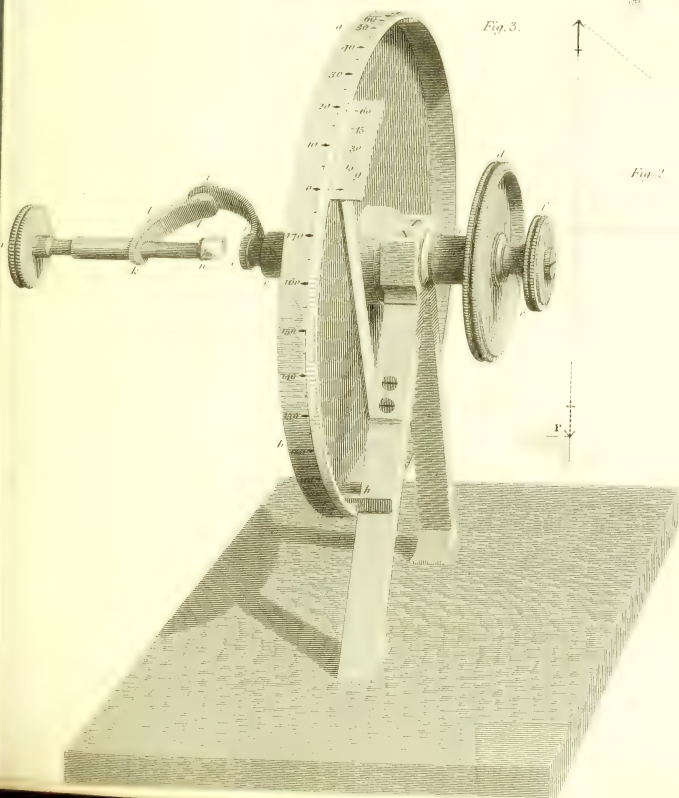
GLANDERS.

PLATE XIX.



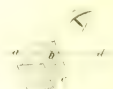
GONIOMETER

by D^r Wollaston.

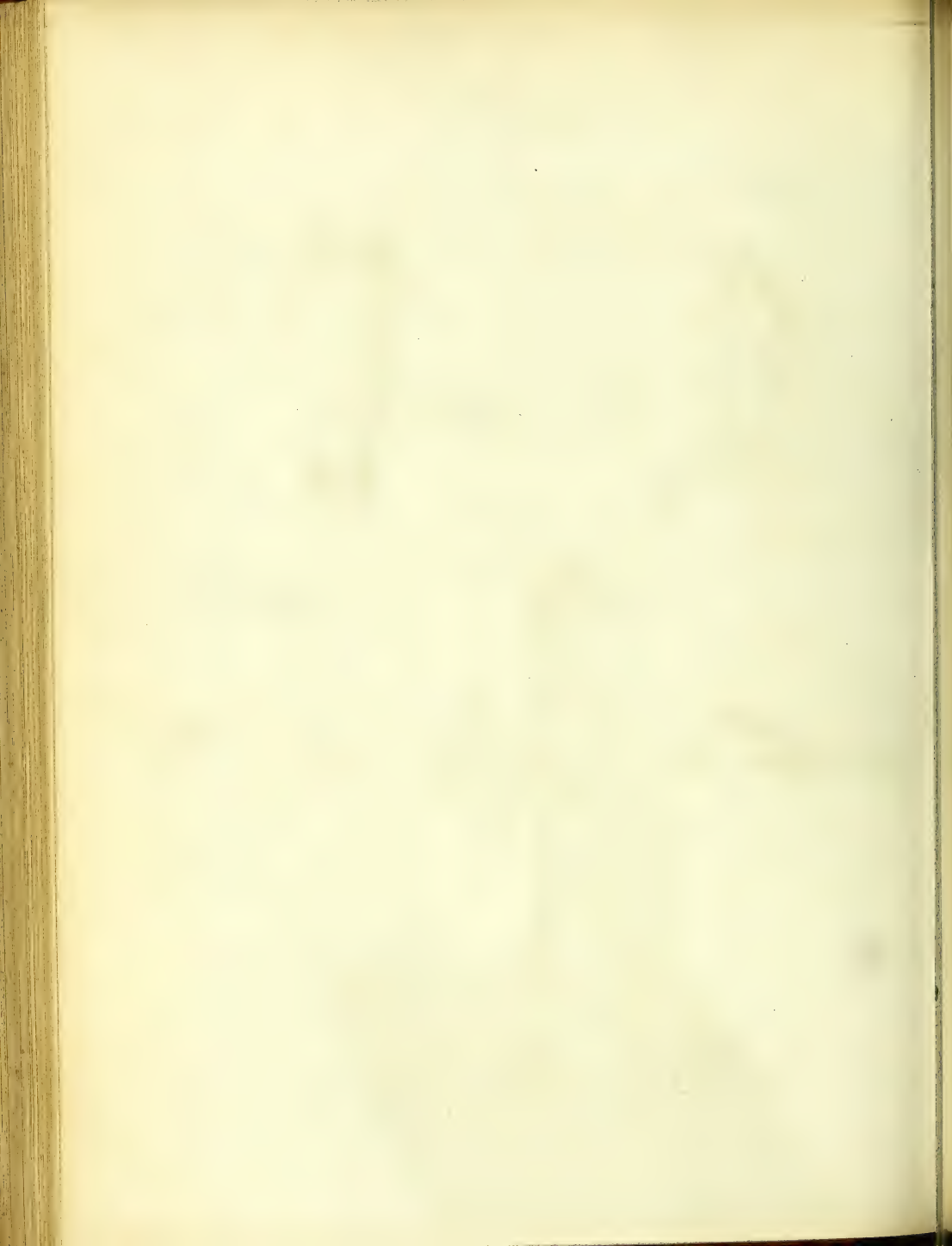


The position of a surface *a b* is determined by the place of an image *V* seen by reflection.

Fig. 2.



If the surface *b c* be turned so as to shew the same image in the same place it must have moved through an angle *d b c*, the supplement to *a b c*.



MISCELLANY.

BEE HIVE.

Fig. 1.

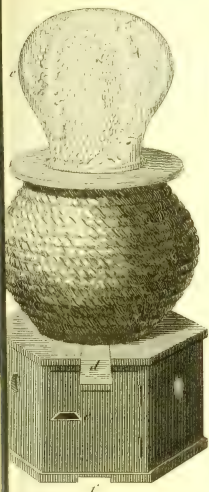


Fig. 2.

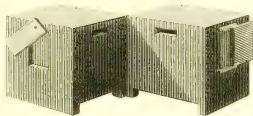


Fig. 3.

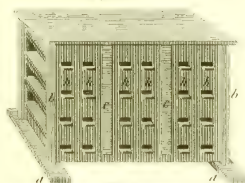
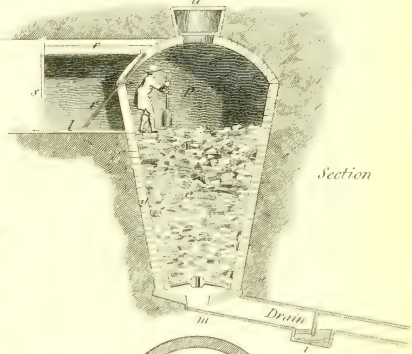


Fig. 4.

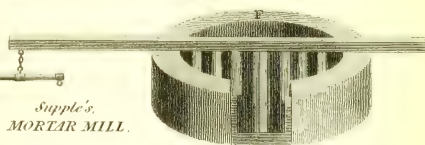
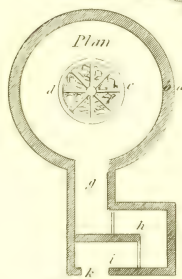


ICE HOUSE.

Fig. 5.

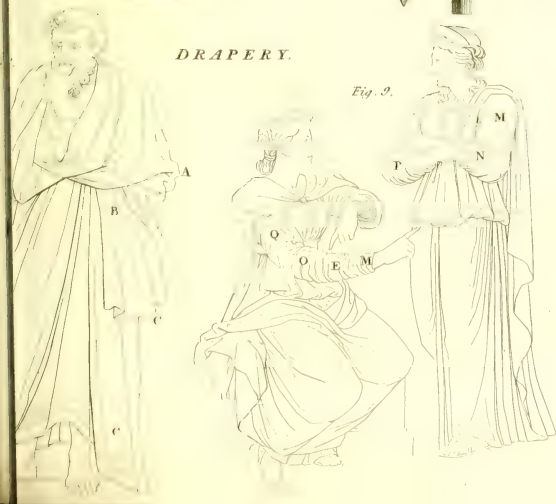


Plan



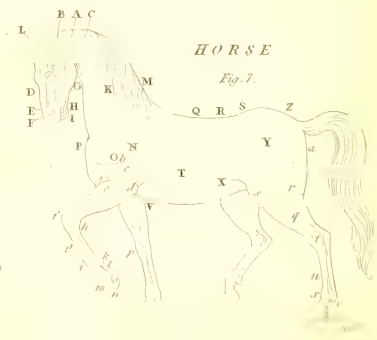
DRAPERY.

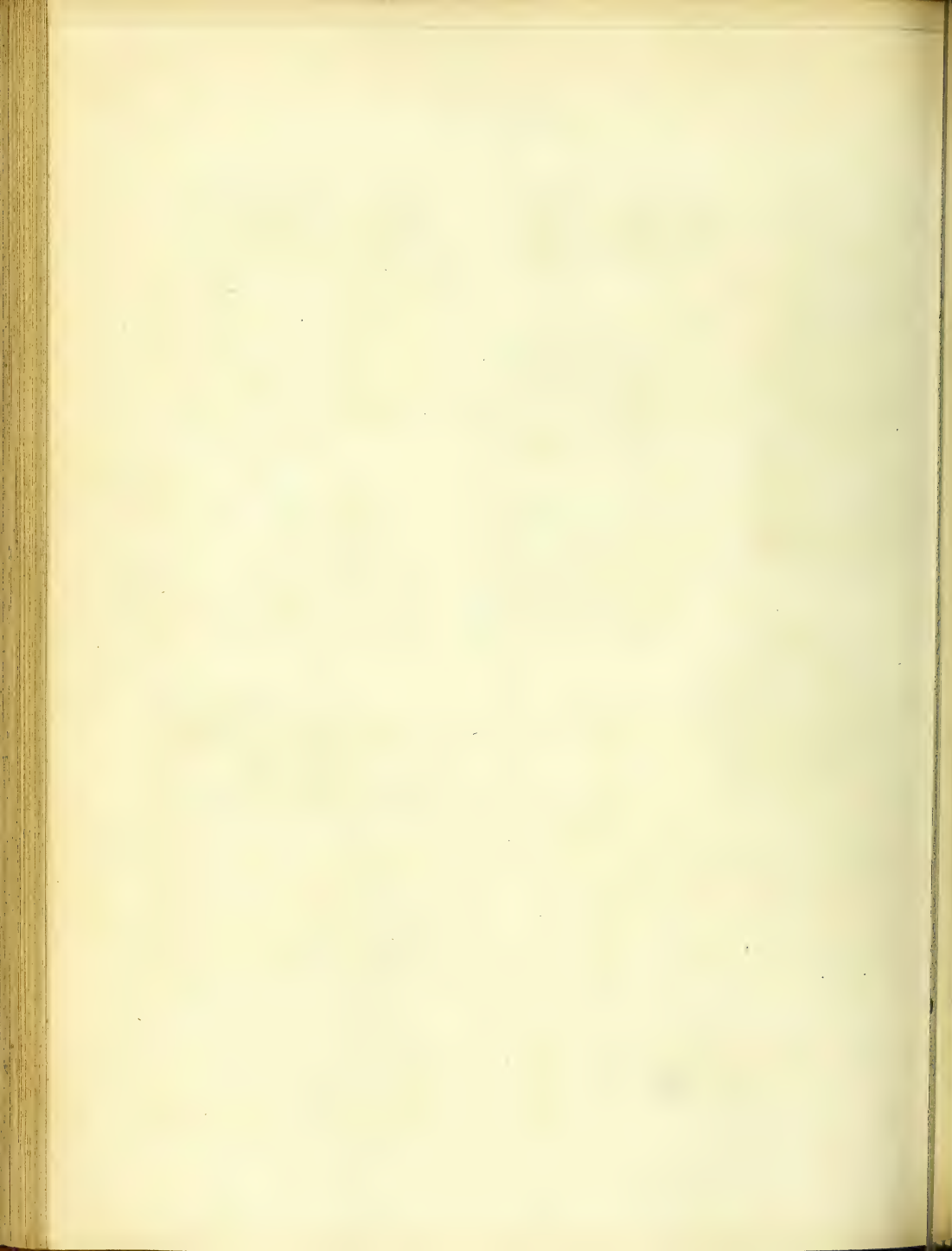
Fig. 2.



HORSE

Fig. 7.





M^r Bramah's Patent Lock.

Fig. 2.

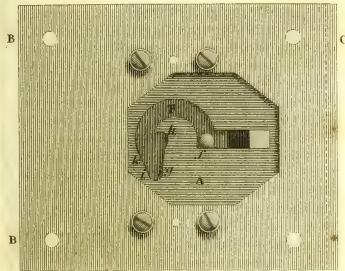


Fig. 1.

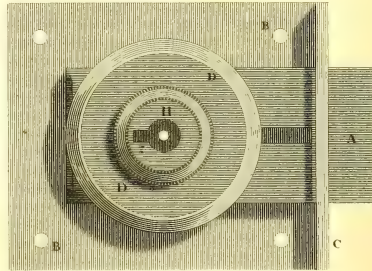


Fig. 1.

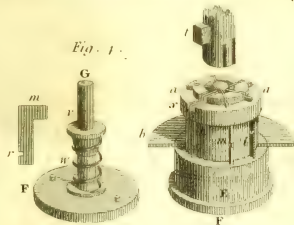


Fig. 2.

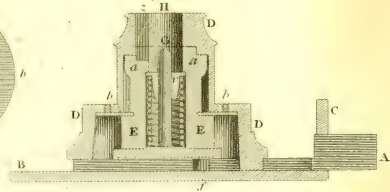


Fig. 6.

M^r Rowntree's Patent Lock.

Fig. 5.

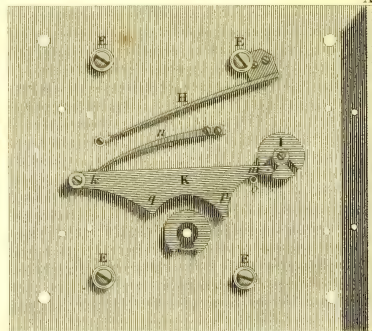
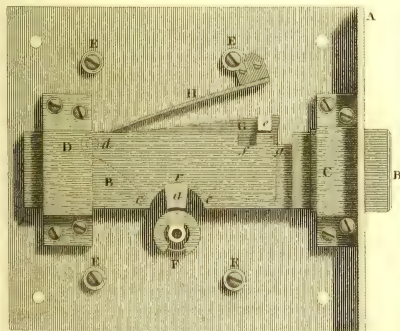


Fig. 3.

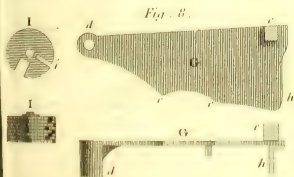
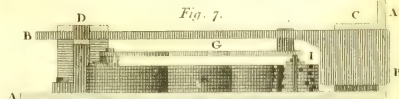
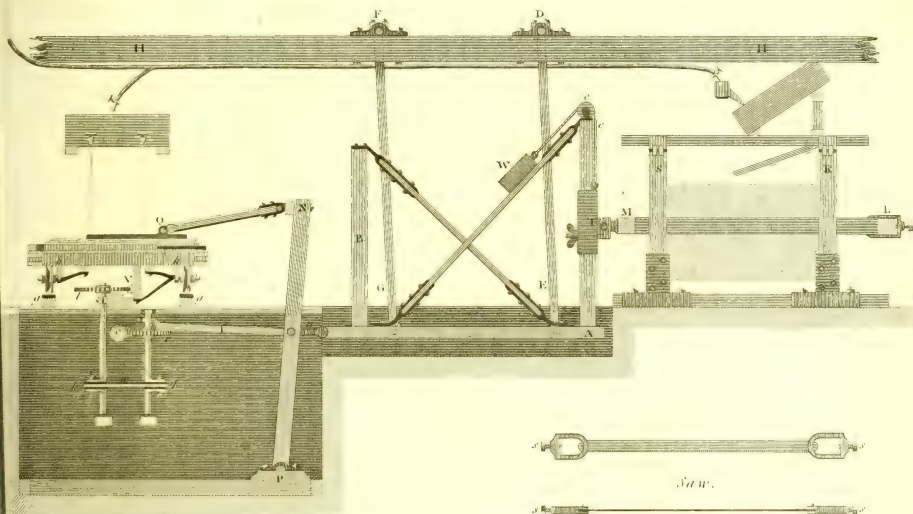


Fig. 7.

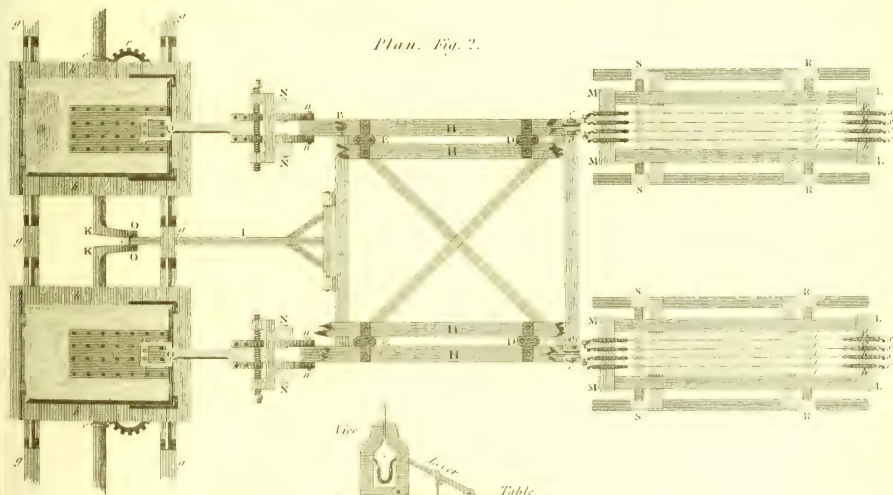




Elevation Marble Mill. Fig. 1.



Plan. Fig. 2.



Marquetry.

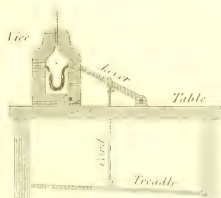
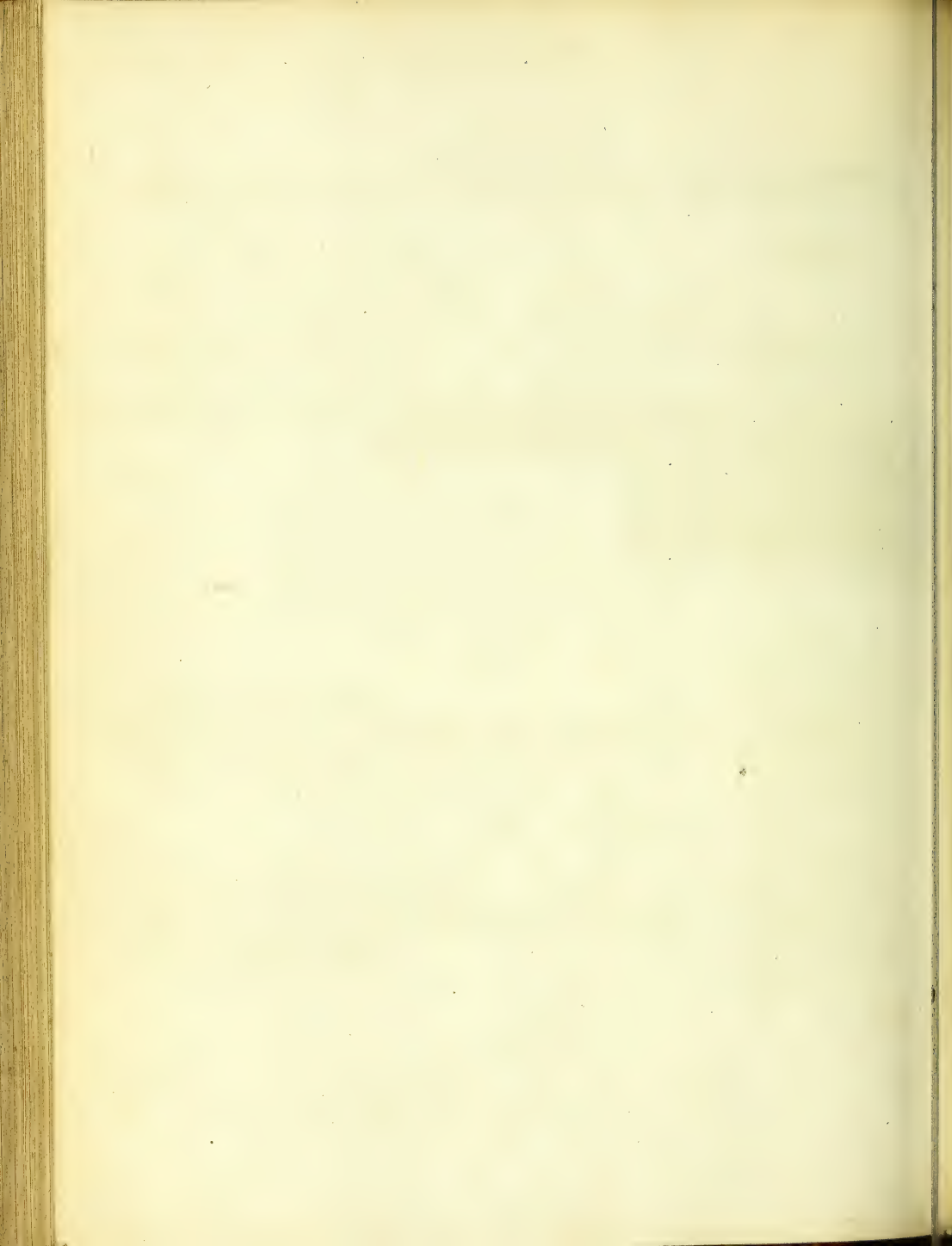


Fig. 3.



MISCELLANY. PERSPECTIVE MACHINES.

PLATE XXIII & XXIV

Fig. 1. PLATE XXIII

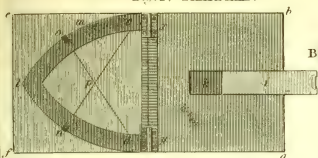


Fig. 2.

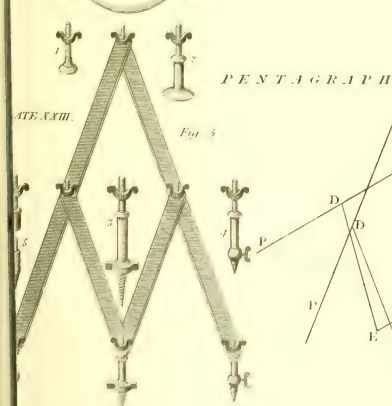
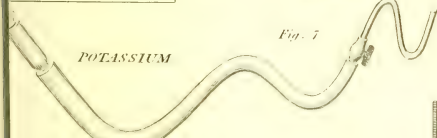
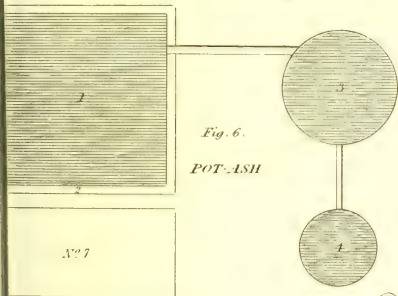
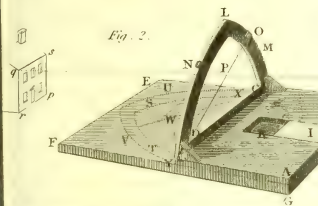


Fig. 3.

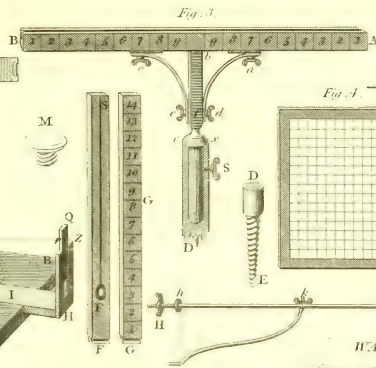


Fig. 4.

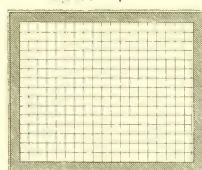
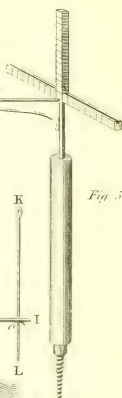


Fig. 5.



WATER SPOUT

Fig. 8.

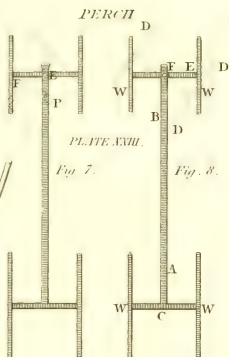


Fig. 7.

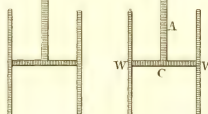


Fig. 6.

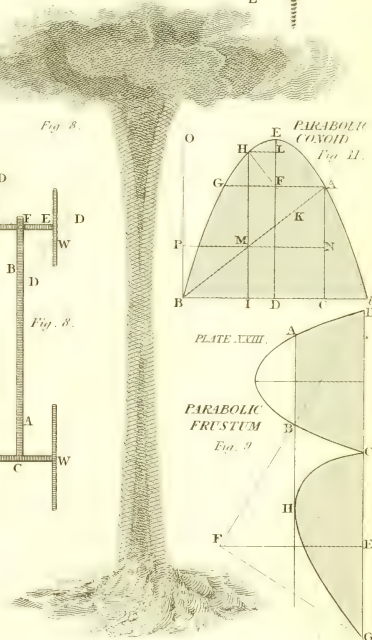
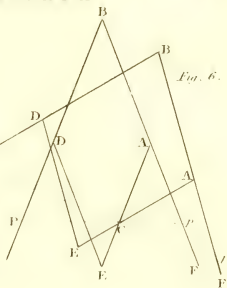
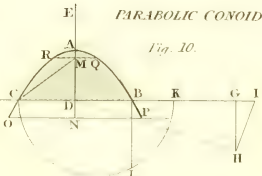


Fig. 11. PARABOLIC CONOID

Fig. 9. PARABOLIC FRUSTUM



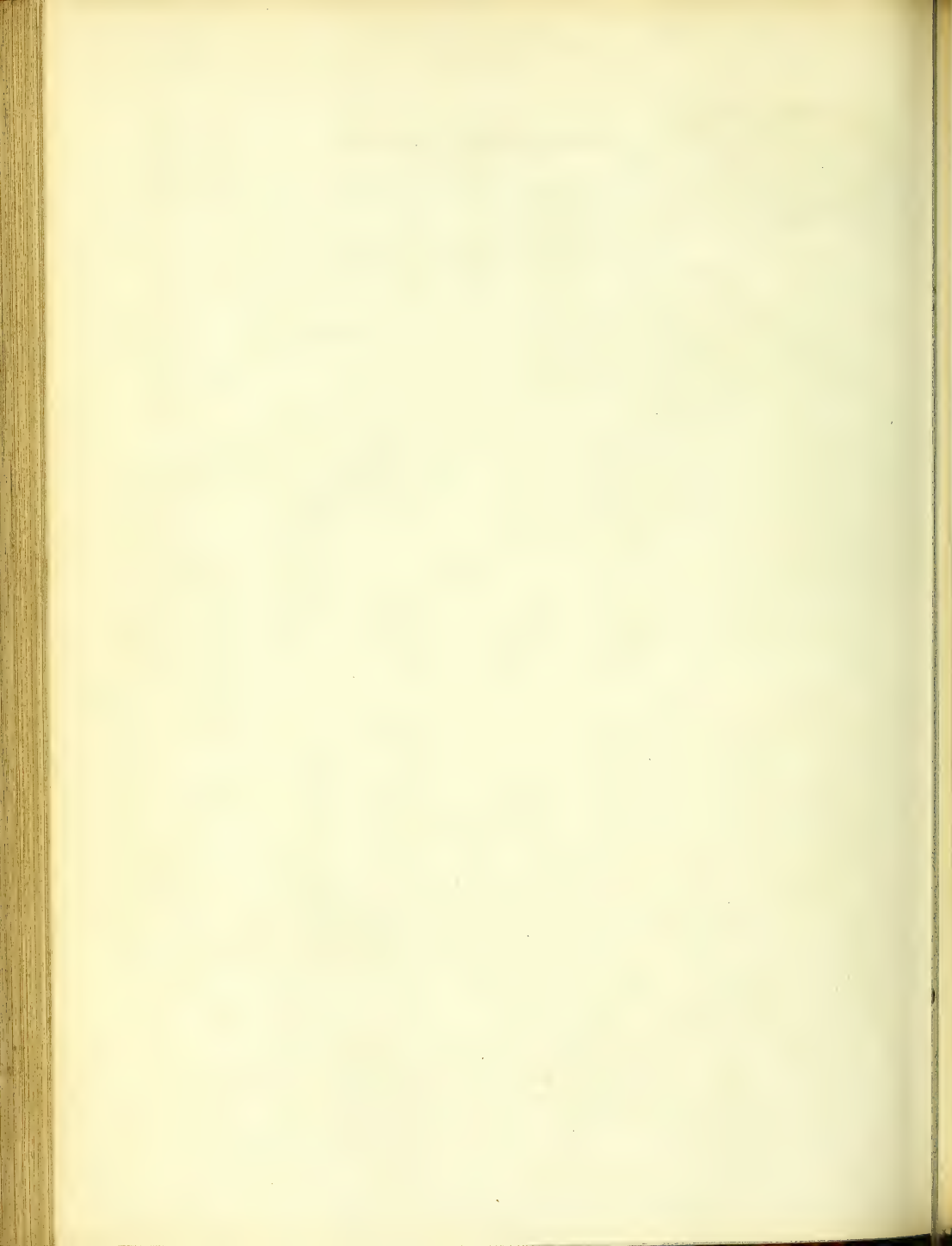


Fig. 2. CROWTH.

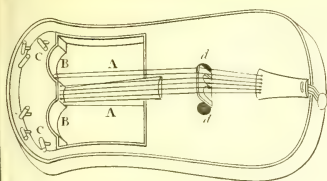


Fig. 3. FILTRATION.

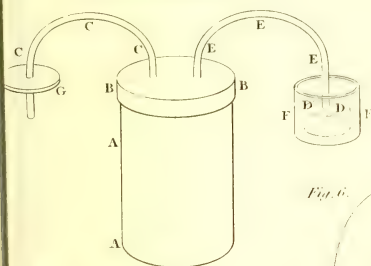
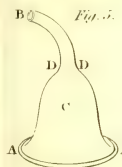
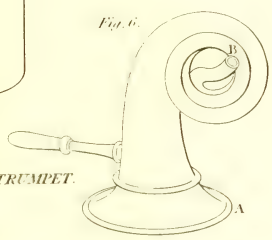


Fig. 5.



Hearing TRUMPET.

TIDE



Dial.

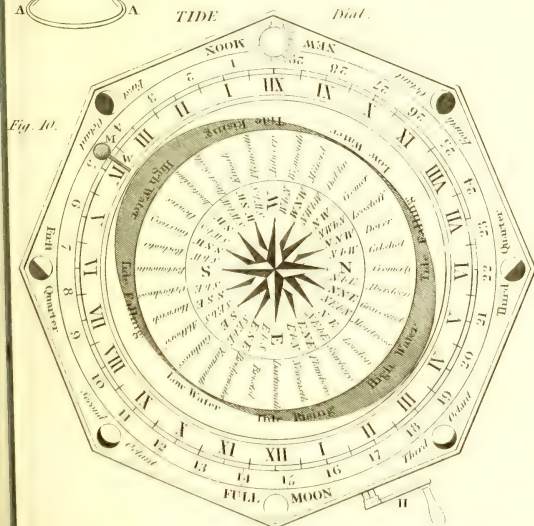
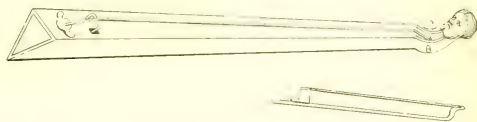


Fig. 10.

Fig. 1. ÆOLUS'S Harp.



Fig. 4. Marine TRUMPET.



Spoking TRUMPET.

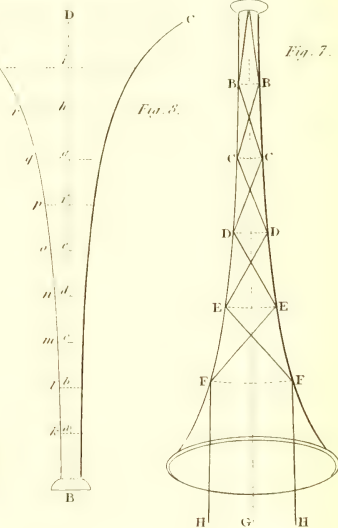


Fig. 7.

Fig. 8.

VOICE

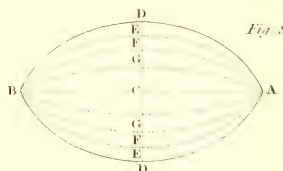









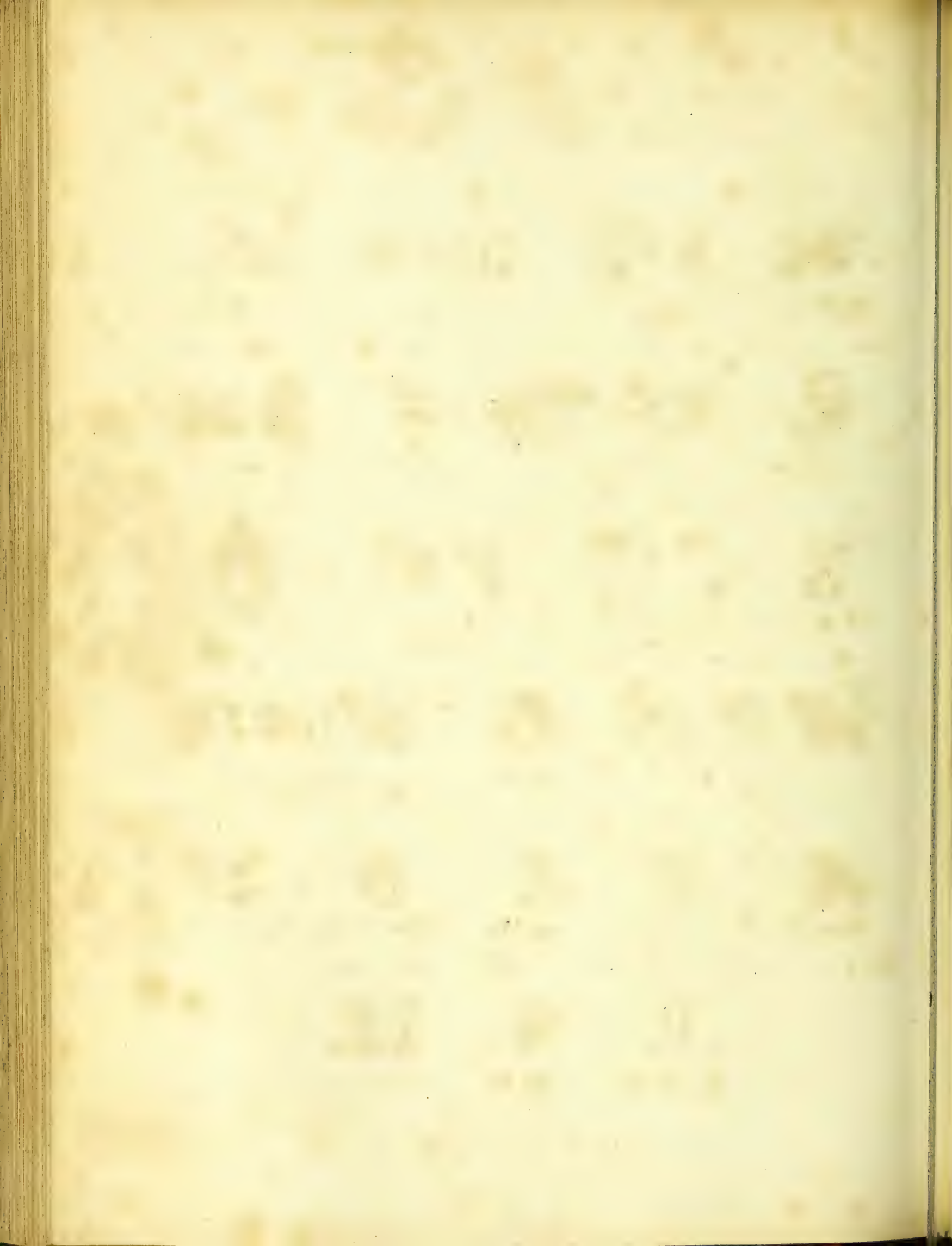


Fig. 9.

MONOGRAMS, &c.

used by the *FRENCH* Engravers

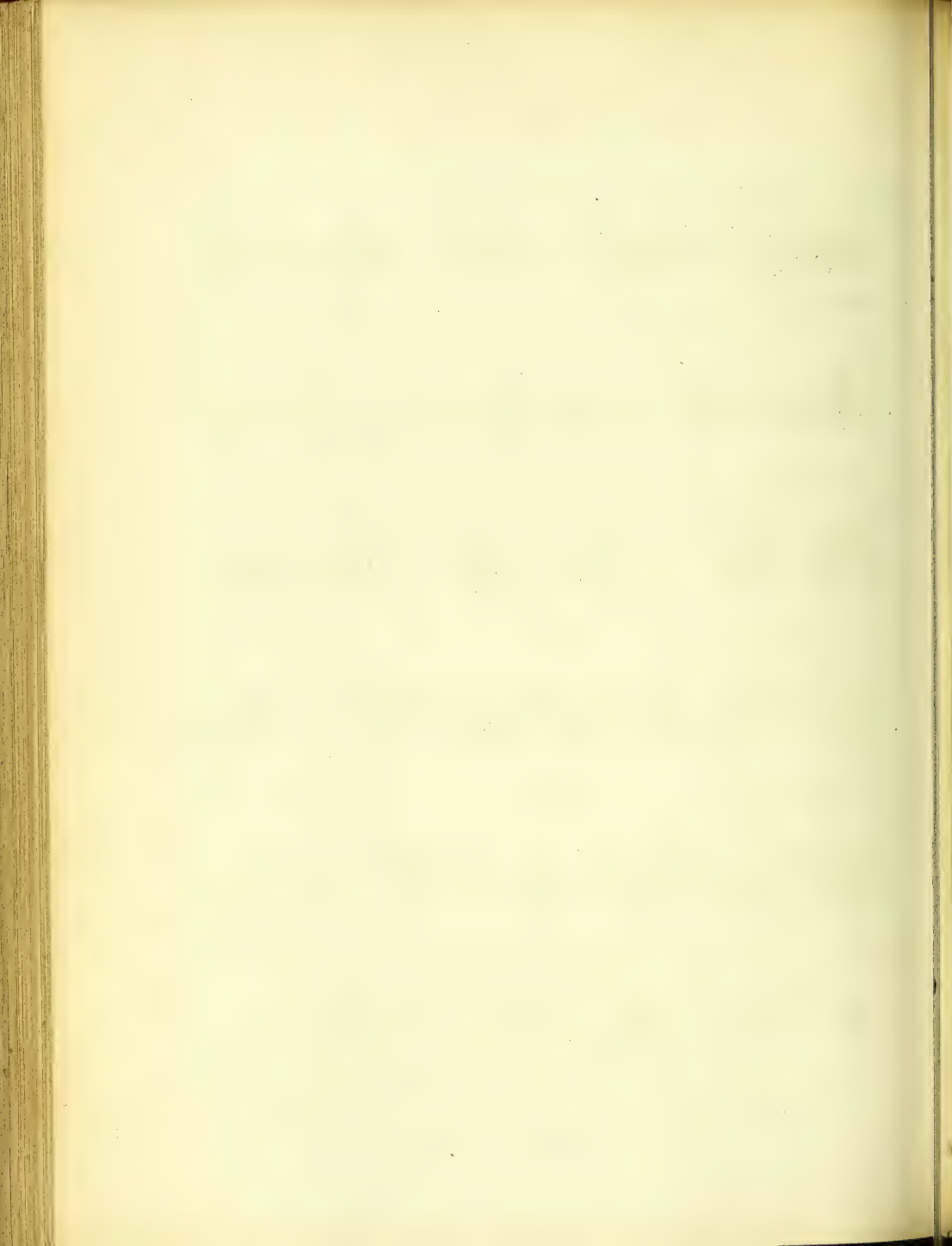
 <p><i>Wendel Reich</i></p>	 <p><i>Jean Duvert or Davet</i> 2 Marks</p>	 <p><i>Noel Garnier</i></p>	 <p><i>Michael Lasne</i></p>
 <p><i>Leonard Gaultier</i></p>	   <p><i>Pierre Weartier or Bois le duc</i> 2 Cyphers.</p> <p><i>The Wood Cuts</i> of P Weartier</p>		 <p><i>Selemou Bonard</i> 2 Marks</p>
 <p><i>Roué Boivin</i></p>	 <p><i>Jacques Perissin or Perissius</i> 2 Marks</p>	 <p><i>François Favier</i> 2 Cyphers</p>	 <p><i>Pierre Prebictte</i></p>
   <p><i>Jacome David</i> 3 Cyphers</p>		 <p><i>Pierre Duret</i></p>	   <p><i>Stephan du Perac</i> 3 Marks</p>
 <p><i>Antoine Garmet</i></p>	 <p><i>François Cheveau</i></p>	 <p><i>Jean Coiray</i></p>	 <p><i>Dominique Barriere</i></p>
 <p><i>Sebastien Vuilleminot</i></p>			
 <p><i>Pierre Lombart</i></p>		 <p><i>Jacques Stella</i></p>	 <p><i>Nicholas de Larminisau</i></p>



MONOGRAMS &c
used by the GERMAN Engineers

Plate 1

 <p><i>Martin Schwen</i></p>	 <p><i>Bartholomew Schwen</i></p>	 <p><i>Sandwich's Incognymon Frankfurt 1755</i></p>	 <p><i>Hans Schaufflin, Sen'</i> 3 Marks</p>
 <p><i>Hans Schaufflin, Jun'</i> 3 Marks</p>	 <p><i>Martin Zigel</i> 2 Marks</p>	 <p><i>Albert Glockenher</i> 2 Marks</p>	
 <p><i>Albert Altkapf</i> 2 Marks</p>	 <p><i>Albert Duer</i> 2 Marks</p>	 <p><i>Hans Holwein</i> 2 doubtful Marks</p>	
 <p><i>Seigmund Holwein</i></p>	 <p><i>Luwig Cressel</i> 5 Marks</p>		 <p><i>Luwig Krieger</i></p>
 <p><i>Hans Scholt Beham</i> his 1st Mark his 2nd Mark</p>	 <p><i>Burgheime, Halding & Breseng</i> of doubtful Authority</p>		 <p><i>Bartholomew</i> 2 doubtful Marks</p>
 <p><i>Creyer, Pin</i> 2 Marks</p>	 <p><i>Hans Altkapf</i></p>	 <p><i>Hans Bressamer</i></p>	 <p><i>Augustin Hirschfeld</i></p>



MONOGRAMS, &c.
used by the GERMAN Engravers.

Plate II.

 <i>Jacob Binck</i>	 <i>Henry Lautensack</i> <i>2 Marks</i>	  <i>Hans Schald Lautensack</i> <i>2 Marks</i>	 <i>Theodore de Brie</i>
 <i>Christopher Stimmer</i>	   <i>David or Daniel Hopfer</i> <i>2 Marks</i>	  <i>Jerome Hopfer</i>	  <i>Tobias Stimmer</i> <i>2 Cyphers</i>
  <i>Melchior Lorich</i> <i>2 Cyphers</i>	   <i>Vinyl Selis</i> <i>3 Cyphers</i>	  <i>Christopher Maurer</i> <i>2 Cyphers</i>	
 <i>Christopher Jannitzer</i>	     <i>Jost or Jodocus Amman</i> <i>3 Marks</i>	 <i>Matthias Greuter</i>	
 <i>John Frederic Greuter</i>	 <i>Domenic Custes</i>	  <i>Theodore Cruger</i> <i>2 Cyphers</i>	 <i>Matthias Cruger</i>
 <i>Wolfgang Kilian</i>	 <i>Lucas Kilian</i>	 <i>Bartholomew Kilian</i> <i>1 dentful</i>	

KL

MONOGRAMS, &c.
used by the *GERALDIN* Engravers.

Plate III.



Matthew Merian
5 Marks



Christopher Jegher



Winnslaus Hellar
The marks used
by Hellar at
Piquet



John William Burr



Carand Laporte
4 Letters



John Ulrich Krius



Andria Meyer
2 Marks



John James Thurneysen



Dirick Meyer
3 Marks

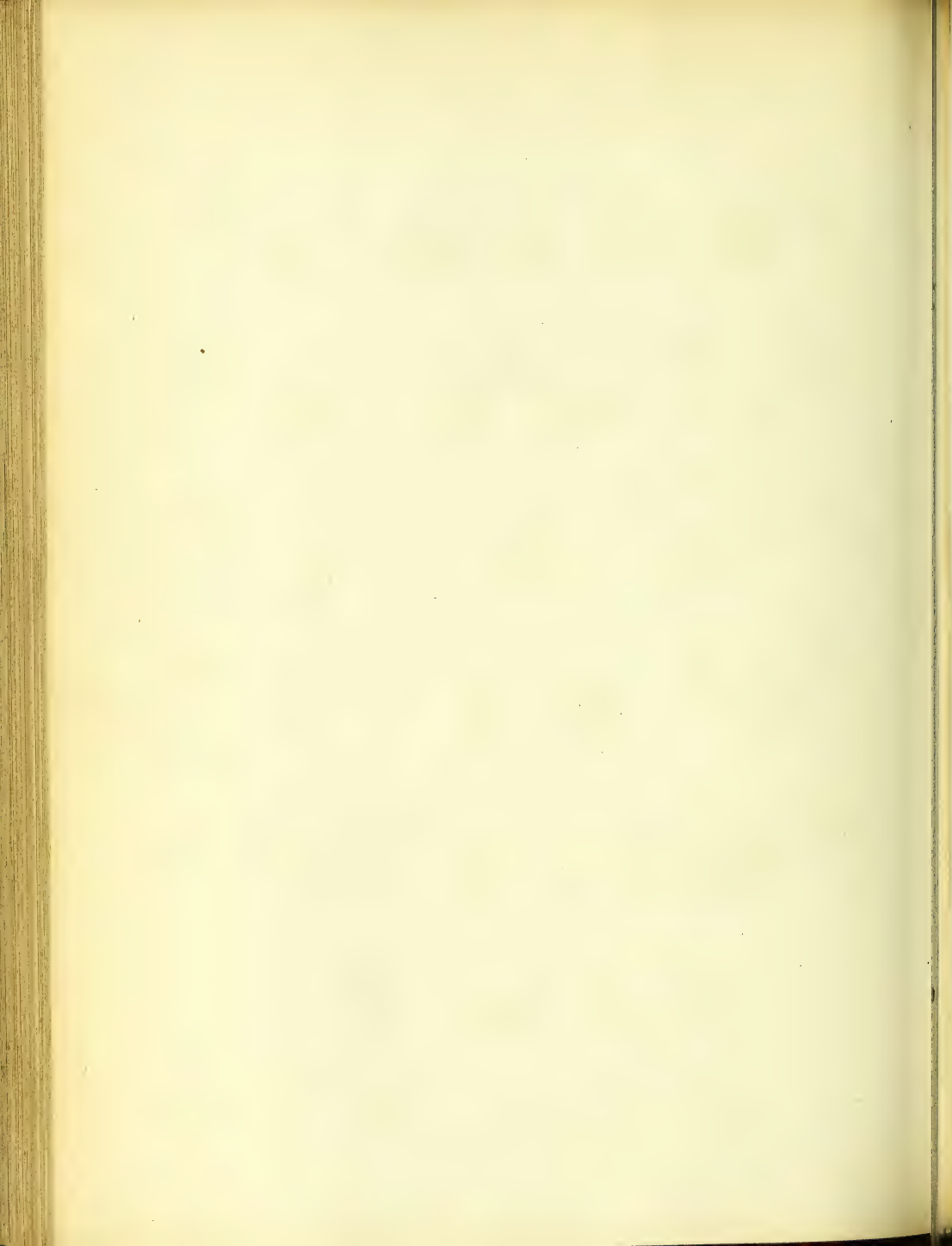


Rudolph Meyer



Adrian Van Oude
2 Marks



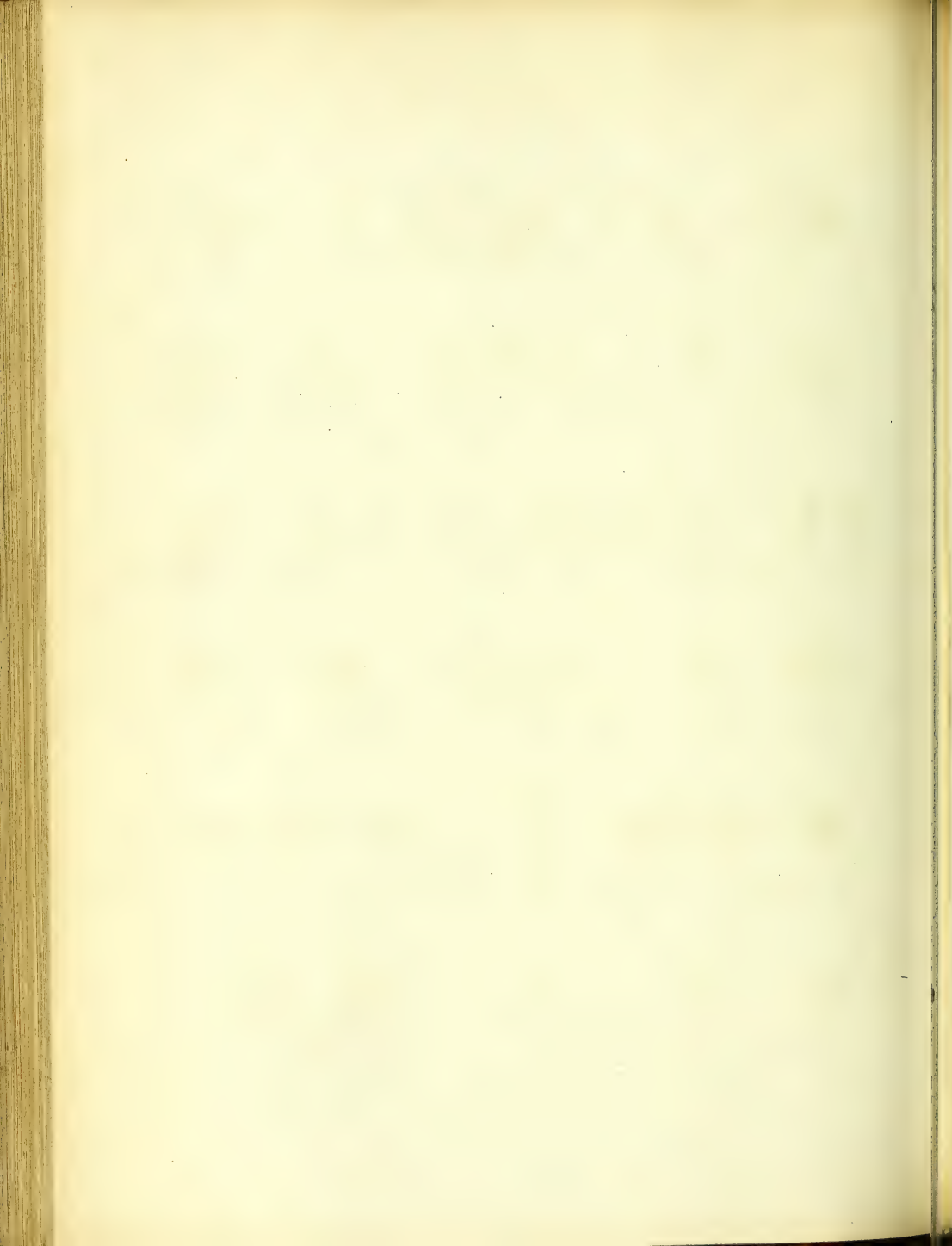


MONOGRAMS, &c.

used by the Engravers of the LOW COUNTRIES.

Plate I.

 <i>John Collaert</i>	 <i>Jerome Bos or Bosche</i> 2 Marks	  <i>Jacob Bosius</i>		
 <i>Henry Goltzius</i>	 <i>Peter Cocck</i>	 <i>Walter van Aphen</i>	 <i>Lucas Jacobs</i>	 <i>Adriaen Collaert</i>
 <i>Cornelius Metensis</i>	   <i>Cornelius Bos</i> 1 Mark	  <i>Martin Hemskerk</i>		
 <i>Peter Breughel</i>	 <i>Crispin de Paske</i>	 <i>Dietrich van Slaren</i>	 <i>Henry van Cleef</i>	 <i>William de Paske</i>
   <i>Dan Vliet or Verhaert</i> 3 Cyphers	 <i>Francis</i> <i>Balslene</i>	   <i>Crispin vanden Broeck</i> 3 Cyphers		
  <i>Jerome Cocck</i> 2 Cyphers	 <i>Martin van Cleve</i>	  <i>Mandalen de Paek</i> 2 Cyphers		



MONOGRAMS, &c.
used by the Engravers of the LOW COUNTRIES.

Plate II.

P

Simon Pagse

W

Christopher van Nissem

H. Bot.

Hans or John Bot

V

Cornelius van Nissem

S

John Sadeler

P. P.

Philip Galle
2 Marks



Cornelius Cent

N. B. N. B.

Nicholas de Bruyn
2 Marks

XL. AV

Afuerus Londersel
2 Cyphers

HEW

Jerome Wierix

N. AB. AB.

Abraham de Bruyn
3 Marks

D

Zachary Dolendo

M

Paul Moreelse

K. K. Kiche

Karl van Nissem

M

James Matham

LG

James de Gheyn
the elder

S S S

John or Hans Soenredam
2 Cyphers

B

Bartholomew Dolendo
3 Marks



B

C

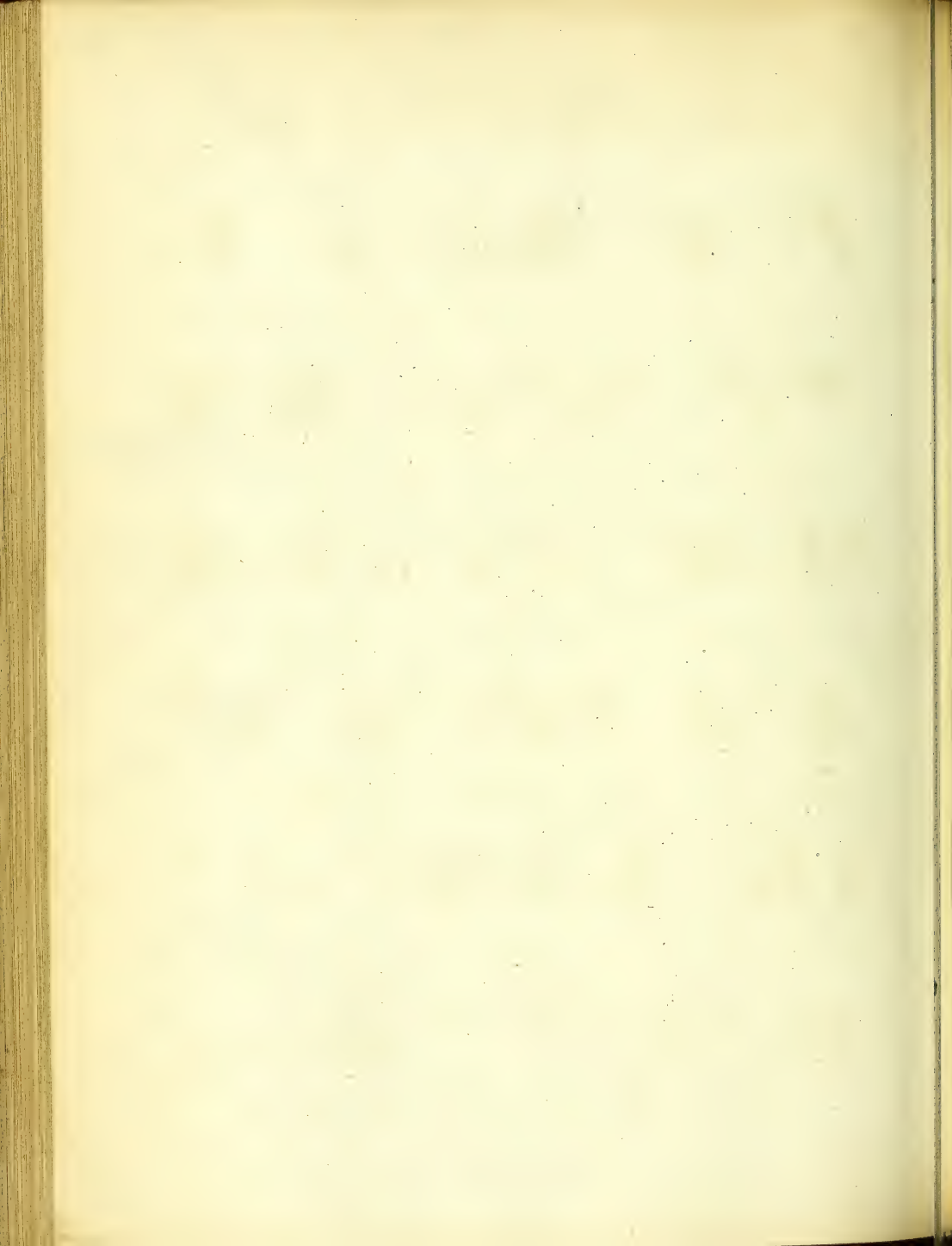
William Soenredam

H. H.

Henry Hendrix

Bloemart

Abraham Bloemart



MONOGRAMS &c.,
used by the Engravers of the LOW-COUNTRIES.

Plate II.

H

V

GH

D

B

Jest Hendius

Lucas Vorsterman

William Hendius
2 Copies

David Tuijts

Gondius Blocher

MN M

A. B. G. E. V

Michael Natalis
2 Marks

Sheltius a Bolswert
2 Marks

Essie van de Achte

A

Haams

Bolswert. B.

M

Albert Flamen

Adrian a Bolswert
2 Marks

Peter Meijer

LM

L. B. B

N. N.

Christian Louis Meyert

Nicholas Borchgrevink
3 Copies

Peter Nijp

↓. V

L. B. B. B

↓. ↓

Nicholas Vijfster
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Peter Quist
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John George van Vliet
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AN

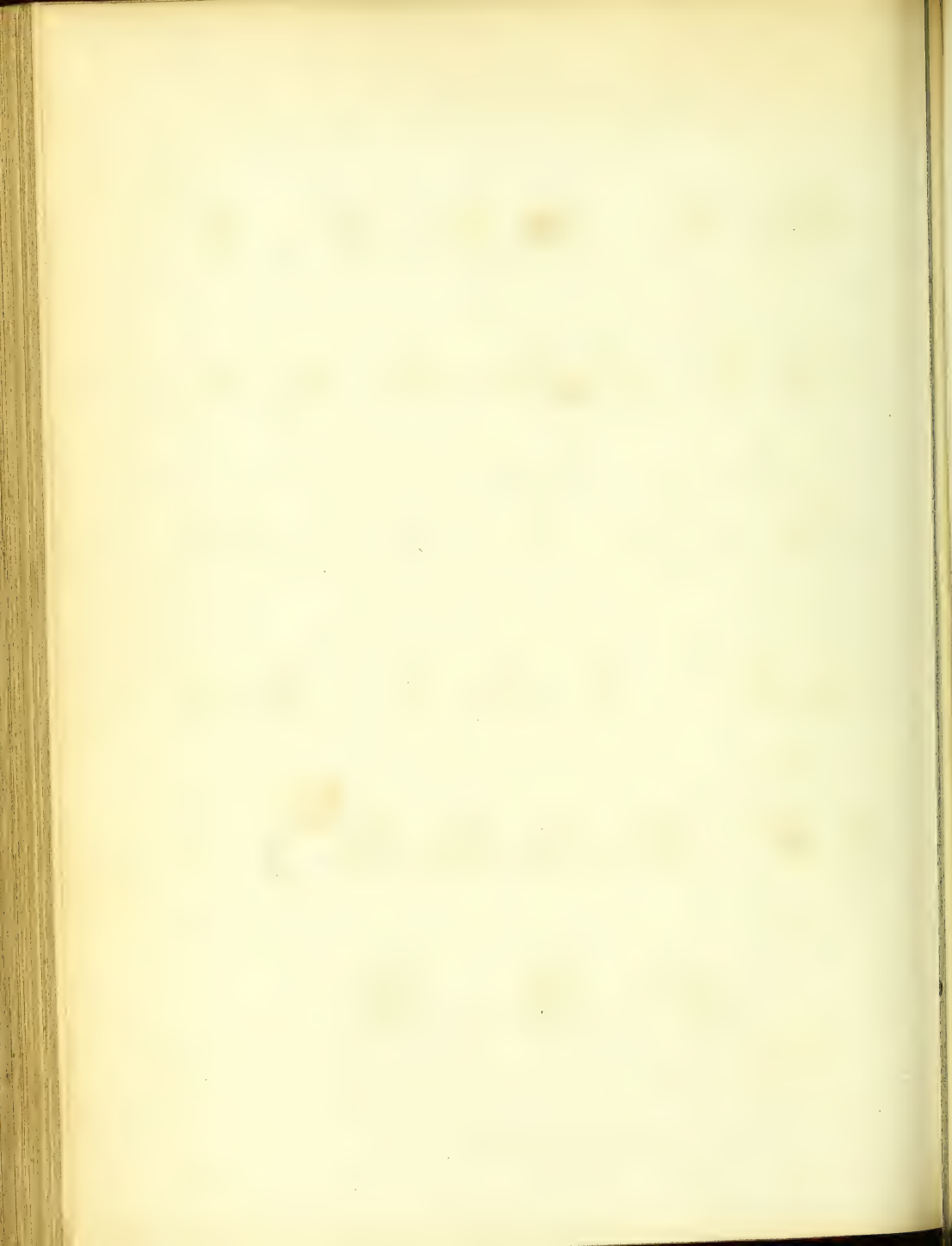
AB

RB

Antonie Waterloo

Henry van der Borch

Peter van der Borch



MONOGRAMS &c.
used by the Engravers of the LOW-COUNTRIES:

Plate II

VR

Thodore van Kessel

A

Abraham Careels

HS

Herman van Swanevelt

E.

John de Bischoep or Episcopius

E. Cruyl

Levin Cruyl

B

Bartholomew Breenbergh

S

John van Smeit

HH R. 2h.

Johannes van den Hagen
1 Mark

XX

Robert van Aenderlecht

F

J. F. F. F.

MB

John van Hogenberg

RB

Peter van Bloek

WB

William Bideaway

VB

John van den Eynden

WV

William de Leem

J. f. f.

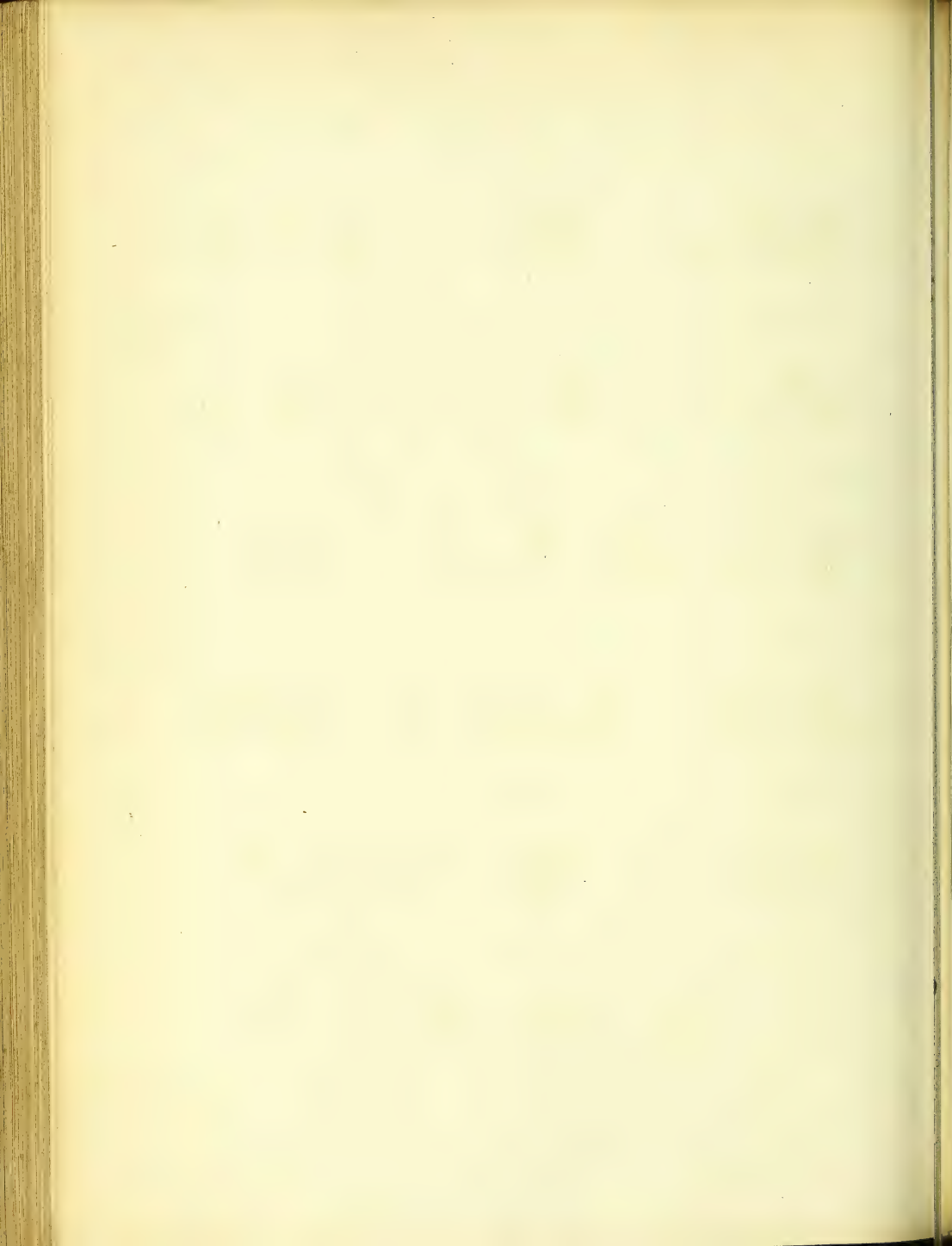
ML. ML. ML.

Herman. Muller

1 Mark

S

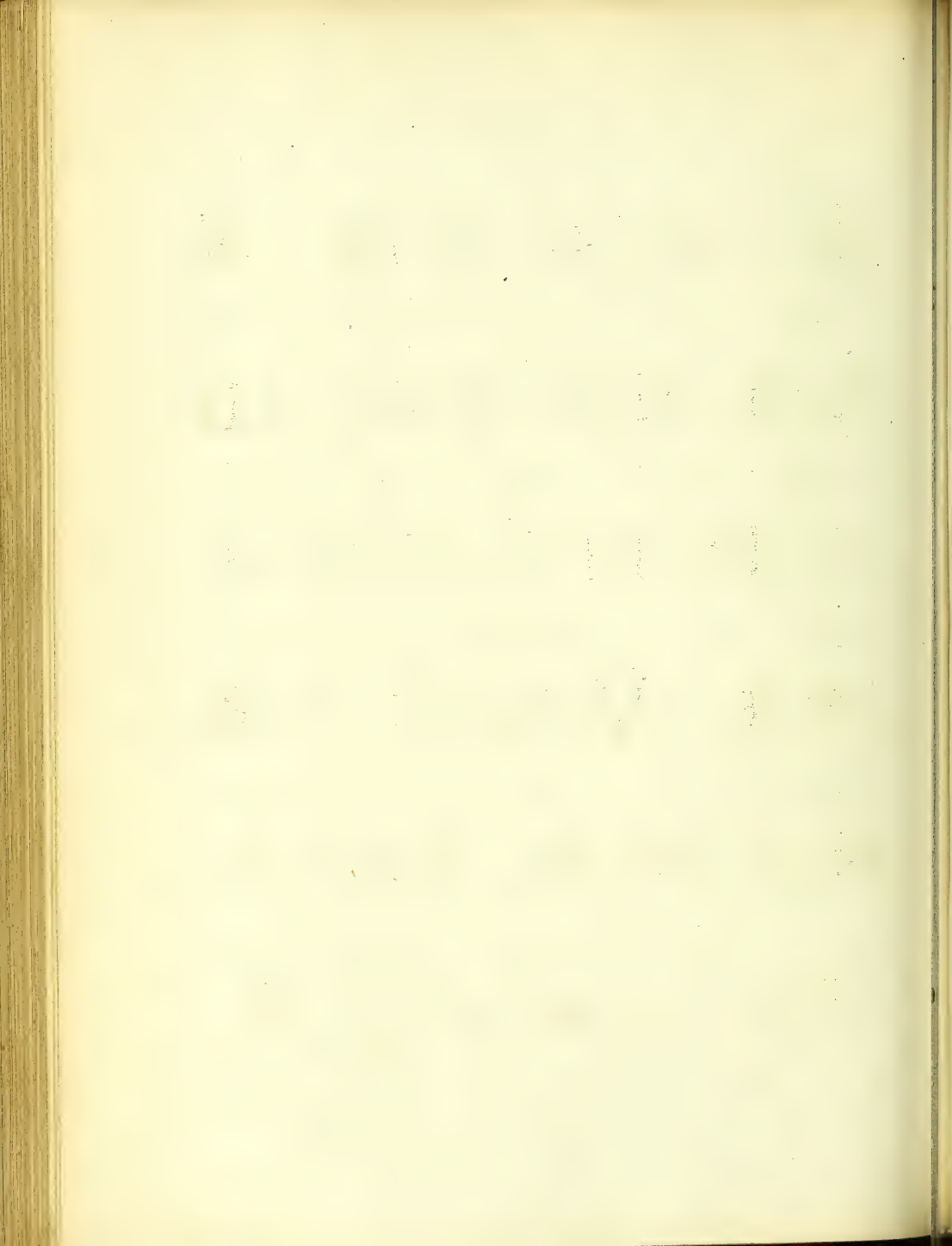
Peter Sijmwerens



MONOGRAMS, &c
used by the ITALIAN Engravers.

Plate I.

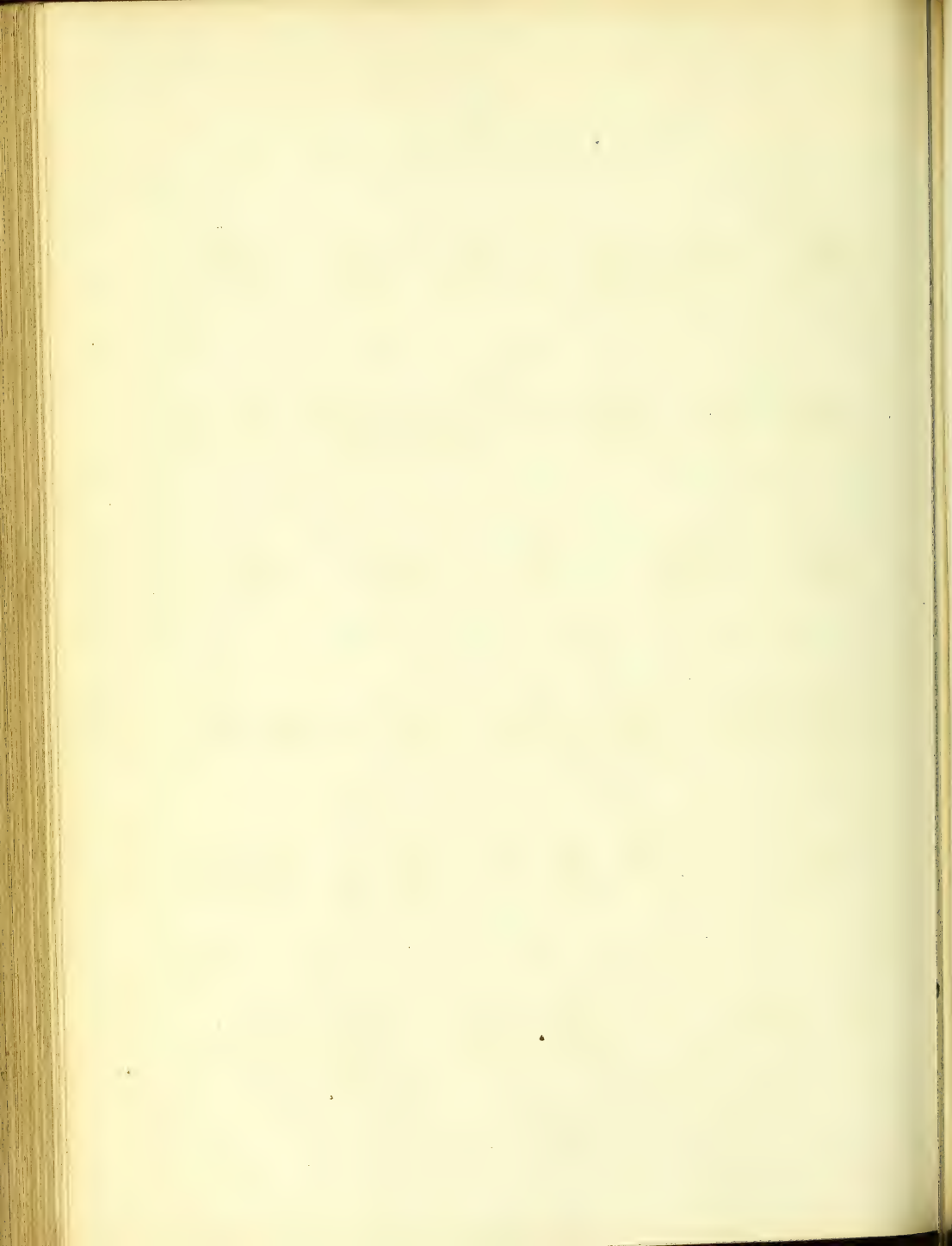
						
<i>J. Ant. de Buis</i>	<i>Andrea Montagna</i>	<i>Nicolas da Modena</i> 2 Marks	<i>Agostino of Venice</i>			
						
<i>Dominice Beccafumi</i> of doubtful Authority	<i>Jerome Mezzelle</i> 2 Marks		<i>Lee Davis or</i> <i>Lien Davin</i>			
						
<i>Marc Antoine</i> 1 Cypher and 3 Marks						
						
<i>Mary of Ravenna</i> 2 Cyphers		<i>Julie Benasene</i> 3 Marks		<i>Dominic Barbier</i> 2 Marks		
						
<i>Nicolas Beatrice of Lorraine</i> 1 Cypher				<i>Lucas Penni</i> 1 Mark		
						
<i>Jean Baptisti Ghisi</i>	<i>George Ghisi of Mantua</i> 2 Marks			<i>Adam Ghisi</i> <i>Gr</i>		



MONOGRAMS, &c.
used by the ITALIAN Engravers.

Plate II

 <i>Beldrini</i>	 <i>Martin Beta</i>	 <i>Antonie Fantuzzi</i> 2 Spheres	 <i>J.J. Caraglio</i>	
 <i>Antonie Salamanca</i> 5 Marks		 <i>Gaspar ab Avibus</i> 3 Spheres		
 <i>J. Baptista Cavaleris</i>	 <i>Marie Kartare</i>	 <i>Jacques Palma</i>	 <i>J. Baptiste Tugi</i>	 <i>Franceschini</i>
 <i>Cherubino Alberti</i> 2 Marks	 <i>in Montevia</i> 1605 <i>Andrea Andreami</i> 3 Marks		 <i>Jean Louis Valesie</i> 2 Marks	
 <i>Annibal Caracci</i>	 <i>Antonie Tempesta</i> 4 Marks		 <i>Girolamo Fiala, Pr</i>	
 <i>Levis Civelli</i> 2 Marks	 <i>Francesco Villamini</i>		 <i>Guido Renti</i> 2 Marks	



MONOGRAMS, &c.
used by the ITALIAN Engravers.

Plate III

AB

Alexander Badelt

SP. AR. R

Joseph Ribera (T. Espagnole)
3 Marks

S.
RAE

Raphael Scaminox

EL

Antoni Chamberlain

HB. HB. HB. RB.

Horace Bergiani
4 Cyphers

PA

Alexander Albardi

E

Pietro Testa

GM. G^{MA} GM^{MA} M^{TI} F.

Gioseffe Maria Metelli
1 Mark

SR

Salvator Rosa

A. LF

Antonio Visentini Lucini

BC

Benigno Cantaracina

DB DBella

Stefano Della Bella
2 Marks

IC

Jacques Caffi

GV GV

Ant. Cesare Vacanti

EC EC

Paucello Castiglione
" Cyphers

CB

Giacomo Ballista
Galestrucci

AL

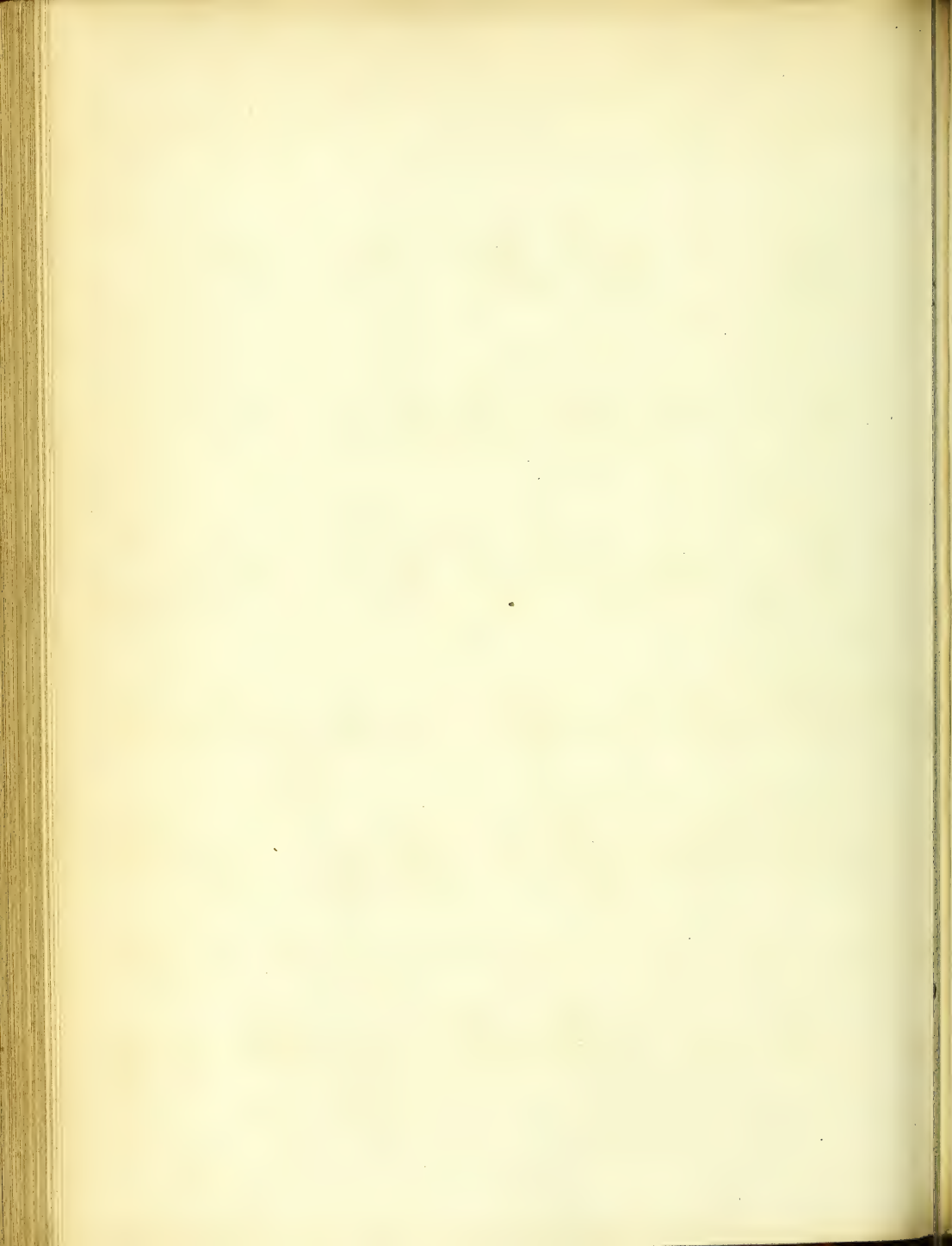
Antonio Maria Zanetti

BD. BD.

Domenico Maria Benavente
2 Cyphers

AB

Antonio Battestra



MODERN TIME-TABLE.


ne Semibreve.....○.....Rests or characters for Silence.....—

Minims.....

Crotchets.....


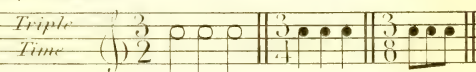
Quavers.....

Semiquavers.....

Demisemiquavers.....

bars Rest. 3 bars. 4 bars. 6 bars. 8 bars. 12 bars. 16 bars. 32 bars.  A point or dot makes a Note half as long again.

Characters for Time.

Common Time  Triple Time 

Time in Common Measure 

Time compound of Triple Time 

In the characters for Time which used to be called the Moods or Modes, where Figures are used, the upper Figure tells how many Notes there are in each Bar, and the under Figure tells of what kind: $\frac{3}{4}$ implies 2 Crotchets or Times so called in the Time Table $\frac{3}{2}$ three Minims $\frac{3}{4}$ three of the 4 Crotchets in the Time Table that are equal to one Semibreve &c.

GRACES AND MARKS OF EXPRESSION.



ARPEGGIO.

Common Arpeggio

2

Em. Bach

4

6

9

Ancient Musical Characters,
of the 14th and 15th Centuries.

Arrangement of the Set of Keys,
on Key'd Instruments.

Rests

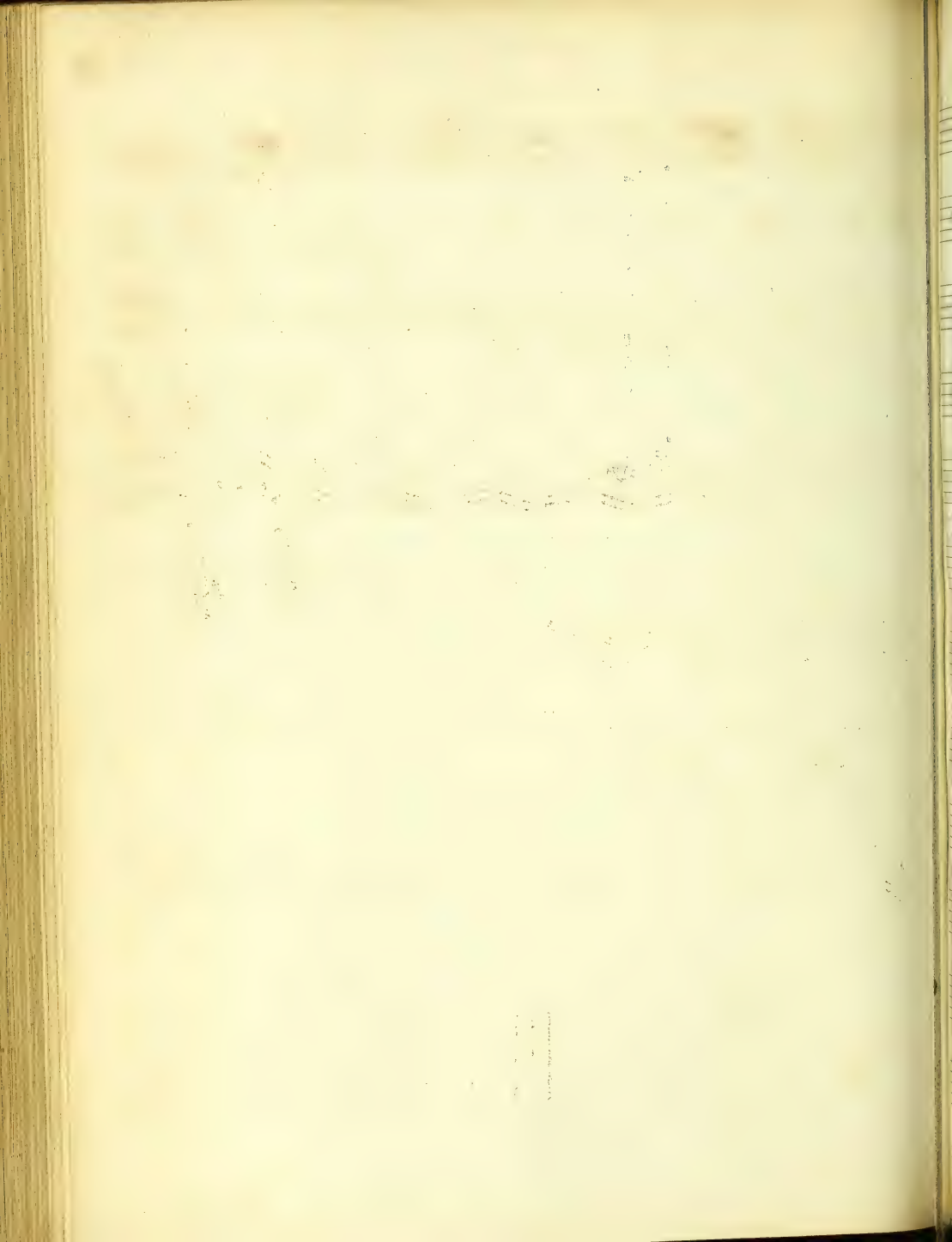
The Maxima equal to two Longs.

The Long equal to two Breves.

The Breve equal to two Semibreves.

The Semibreve equal to two Minims.

C or D	D or E	E	F or G	G or A	A or B	B	C
C	D	E	F	G	A	B	C



THOROUGH BASE, OR ACCOMPANIMENT.

of Intervals.

1st Scale

Unison

Base

2nd Scale

Unisons

Base

Intervals in each Interval.

1st or 2nd	2 ^d is one semitone or half note above the 1 st	
2 ^d or 3 ^d	3 ^d is two semitones or one whole note above the 1 st	
3 ^d or 4 th	4 th is three semitones or one whole and a half note above the 1 st	
4 th or 5 th	5 th is four semitones or two whole notes above the 1 st	
5 th or 6 th	6 th is five semitones or two whole and a half notes above the 1 st	
6 th or 7 th	7 th is six semitones or three whole notes above the 1 st	
7 th or 8 th	8 th is seven semitones or three whole and a half notes above the 1 st	
8 th or 9 th	9 th is eight semitones or four whole notes above the 1 st	
9 th or 10 th	10 th is nine semitones or four whole and a half notes above the 1 st	
10 th or 11 th	11 th is ten semitones or five whole notes above the 1 st	
11 th or 12 th	12 th is eleven semitones or five whole and a half notes above the 1 st	
12 th or 13 th	13 th is twelve semitones or six whole notes above the 1 st	
13 th or 14 th	14 th is thirteen semitones or six whole and a half notes above the 1 st	
14 th or 15 th	15 th is fourteen semitones or seven whole notes above the 1 st	
15 th or 16 th	16 th is fifteen semitones or seven whole and a half notes above the 1 st	
16 th or 17 th	17 th is sixteen semitones or eight whole notes above the 1 st	
17 th or 18 th	18 th is seventeen semitones or eight whole and a half notes above the 1 st	
18 th or 19 th	19 th is eighteen semitones or nine whole notes above the 1 st	
19 th or 20 th	20 th is nineteen semitones or nine whole and a half notes above the 1 st	
20 th or 21 st	21 st is twenty semitones or ten whole notes above the 1 st	
21 st or 22 nd	22 nd is twenty-one semitones or ten whole and a half notes above the 1 st	
22 nd or 23 rd	23 rd is twenty-two semitones or eleven whole notes above the 1 st	
23 rd or 24 th	24 th is twenty-three semitones or eleven whole and a half notes above the 1 st	
24 th or 25 th	25 th is twenty-four semitones or twelve whole notes above the 1 st	
25 th or 26 th	26 th is twenty-five semitones or twelve whole and a half notes above the 1 st	
26 th or 27 th	27 th is twenty-six semitones or thirteen whole notes above the 1 st	
27 th or 28 th	28 th is twenty-seven semitones or thirteen whole and a half notes above the 1 st	
28 th or 29 th	29 th is twenty-eight semitones or fourteen whole notes above the 1 st	
29 th or 30 th	30 th is twenty-nine semitones or fourteen whole and a half notes above the 1 st	
30 th or 31 st	31 st is thirty semitones or fifteen whole notes above the 1 st	
31 st or 32 nd	32 nd is thirty-one semitones or fifteen whole and a half notes above the 1 st	
32 nd or 33 rd	33 rd is thirty-two semitones or sixteen whole notes above the 1 st	
33 rd or 34 th	34 th is thirty-three semitones or sixteen whole and a half notes above the 1 st	
34 th or 35 th	35 th is thirty-four semitones or seventeen whole notes above the 1 st	
35 th or 36 th	36 th is thirty-five semitones or seventeen whole and a half notes above the 1 st	
36 th or 37 th	37 th is thirty-six semitones or eighteen whole notes above the 1 st	
37 th or 38 th	38 th is thirty-seven semitones or eighteen whole and a half notes above the 1 st	
38 th or 39 th	39 th is thirty-eight semitones or nineteen whole notes above the 1 st	
39 th or 40 th	40 th is thirty-nine semitones or nineteen whole and a half notes above the 1 st	
40 th or 41 st	41 st is forty semitones or twenty whole notes above the 1 st	
41 st or 42 nd	42 nd is forty-one semitones or twenty whole and a half notes above the 1 st	
42 nd or 43 rd	43 rd is forty-two semitones or twenty-one whole notes above the 1 st	
43 rd or 44 th	44 th is forty-three semitones or twenty-one whole and a half notes above the 1 st	
44 th or 45 th	45 th is forty-four semitones or twenty-two whole notes above the 1 st	
45 th or 46 th	46 th is forty-five semitones or twenty-two whole and a half notes above the 1 st	
46 th or 47 th	47 th is forty-six semitones or twenty-three whole notes above the 1 st	
47 th or 48 th	48 th is forty-seven semitones or twenty-three whole and a half notes above the 1 st	
48 th or 49 th	49 th is forty-eight semitones or twenty-four whole notes above the 1 st	
49 th or 50 th	50 th is forty-nine semitones or twenty-four whole and a half notes above the 1 st	
50 th or 51 st	51 st is fifty semitones or twenty-five whole notes above the 1 st	
51 st or 52 nd	52 nd is fifty-one semitones or twenty-five whole and a half notes above the 1 st	
52 nd or 53 rd	53 rd is fifty-two semitones or twenty-six whole notes above the 1 st	
53 rd or 54 th	54 th is fifty-three semitones or twenty-six whole and a half notes above the 1 st	
54 th or 55 th	55 th is fifty-four semitones or twenty-seven whole notes above the 1 st	
55 th or 56 th	56 th is fifty-five semitones or twenty-seven whole and a half notes above the 1 st	
56 th or 57 th	57 th is fifty-six semitones or twenty-eight whole notes above the 1 st	
57 th or 58 th	58 th is fifty-seven semitones or twenty-eight whole and a half notes above the 1 st	
58 th or 59 th	59 th is fifty-eight semitones or twenty-nine whole notes above the 1 st	
59 th or 60 th	60 th is fifty-nine semitones or twenty-nine whole and a half notes above the 1 st	
60 th or 61 st	61 st is sixty semitones or thirty whole notes above the 1 st	
61 st or 62 nd	62 nd is sixty-one semitones or thirty whole and a half notes above the 1 st	
62 nd or 63 rd	63 rd is sixty-two semitones or thirty-one whole notes above the 1 st	
63 rd or 64 th	64 th is sixty-three semitones or thirty-one whole and a half notes above the 1 st	
64 th or 65 th	65 th is sixty-four semitones or thirty-two whole notes above the 1 st	
65 th or 66 th	66 th is sixty-five semitones or thirty-two whole and a half notes above the 1 st	
66 th or 67 th	67 th is sixty-six semitones or thirty-three whole notes above the 1 st	
67 th or 68 th	68 th is sixty-seven semitones or thirty-three whole and a half notes above the 1 st	
68 th or 69 th	69 th is sixty-eight semitones or thirty-four whole notes above the 1 st	
69 th or 70 th	70 th is sixty-nine semitones or thirty-four whole and a half notes above the 1 st	
70 th or 71 st	71 st is seventy semitones or thirty-five whole notes above the 1 st	
71 st or 72 nd	72 nd is seventy-one semitones or thirty-five whole and a half notes above the 1 st	
72 nd or 73 rd	73 rd is seventy-two semitones or thirty-six whole notes above the 1 st	
73 rd or 74 th	74 th is seventy-three semitones or thirty-six whole and a half notes above the 1 st	
74 th or 75 th	75 th is seventy-four semitones or thirty-seven whole notes above the 1 st	
75 th or 76 th	76 th is seventy-five semitones or thirty-seven whole and a half notes above the 1 st	
76 th or 77 th	77 th is seventy-six semitones or thirty-eight whole notes above the 1 st	
77 th or 78 th	78 th is seventy-seven semitones or thirty-eight whole and a half notes above the 1 st	
78 th or 79 th	79 th is seventy-eight semitones or thirty-nine whole notes above the 1 st	
79 th or 80 th	80 th is seventy-nine semitones or thirty-nine whole and a half notes above the 1 st	
80 th or 81 st	81 st is eighty semitones or forty whole notes above the 1 st	
81 st or 82 nd	82 nd is eighty-one semitones or forty whole and a half notes above the 1 st	
82 nd or 83 rd	83 rd is eighty-two semitones or forty-one whole notes above the 1 st	
83 rd or 84 th	84 th is eighty-three semitones or forty-one whole and a half notes above the 1 st	
84 th or 85 th	85 th is eighty-four semitones or forty-two whole notes above the 1 st	
85 th or 86 th	86 th is eighty-five semitones or forty-two whole and a half notes above the 1 st	
86 th or 87 th	87 th is eighty-six semitones or forty-three whole notes above the 1 st	
87 th or 88 th	88 th is eighty-seven semitones or forty-three whole and a half notes above the 1 st	
88 th or 89 th	89 th is eighty-eight semitones or forty-four whole notes above the 1 st	
89 th or 90 th	90 th is eighty-nine semitones or forty-four whole and a half notes above the 1 st	
90 th or 91 st	91 st is ninety semitones or forty-five whole notes above the 1 st	
91 st or 92 nd	92 nd is ninety-one semitones or forty-five whole and a half notes above the 1 st	
92 nd or 93 rd	93 rd is ninety-two semitones or forty-six whole notes above the 1 st	
93 rd or 94 th	94 th is ninety-three semitones or forty-six whole and a half notes above the 1 st	
94 th or 95 th	95 th is ninety-four semitones or forty-seven whole notes above the 1 st	
95 th or 96 th	96 th is ninety-five semitones or forty-seven whole and a half notes above the 1 st	
96 th or 97 th	97 th is ninety-six semitones or forty-eight whole notes above the 1 st	
97 th or 98 th	98 th is ninety-seven semitones or forty-eight whole and a half notes above the 1 st	
98 th or 99 th	99 th is ninety-eight semitones or forty-nine whole notes above the 1 st	
99 th or 100 th	100 th is ninety-nine semitones or forty-nine whole and a half notes above the 1 st	

VI. The common chord is composed of three notes which range in the 1st, 3rd & 5th of the scale.

Notes but one semitone or half note above the 1st of the scale, as the 2^d, 3^d, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 13th, 14th, 15th, 16th, 17th, 18th, 19th, 20th, 21st, 22nd, 23rd, 24th, 25th, 26th, 27th, 28th, 29th, 30th, 31st, 32nd, 33rd, 34th, 35th, 36th, 37th, 38th, 39th, 40th, 41st, 42nd, 43rd, 44th, 45th, 46th, 47th, 48th, 49th, 50th, 51st, 52nd, 53rd, 54th, 55th, 56th, 57th, 58th, 59th, 60th, 61st, 62nd, 63rd, 64th, 65th, 66th, 67th, 68th, 69th, 70th, 71st, 72nd, 73rd, 74th, 75th, 76th, 77th, 78th, 79th, 80th, 81st, 82nd, 83rd, 84th, 85th, 86th, 87th, 88th, 89th, 90th, 91st, 92nd, 93rd, 94th, 95th, 96th, 97th, 98th, 99th, 100th.

Common or perfect chord is composed of the 1st, 3rd & 5th above the base & may be played in any of the above manner.

Arithmetic circle Modulation by 3rd

The common chord major and minor

The 12 semitones in the Octave

be practised upwards and downwards in the following manner.

11. The common chord is composed of three notes which range in the 1st, 3rd & 5th of the scale.

Notes but one semitone or half note above the 1st of the scale, as the 2^d, 3^d, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 13th, 14th, 15th, 16th, 17th, 18th, 19th, 20th, 21st, 22nd, 23rd, 24th, 25th, 26th, 27th, 28th, 29th, 30th, 31st, 32nd, 33rd, 34th, 35th, 36th, 37th, 38th, 39th, 40th, 41st, 42nd, 43rd, 44th, 45th, 46th, 47th, 48th, 49th, 50th, 51st, 52nd, 53rd, 54th, 55th, 56th, 57th, 58th, 59th, 60th, 61st, 62nd, 63rd, 64th, 65th, 66th, 67th, 68th, 69th, 70th, 71st, 72nd, 73rd, 74th, 75th, 76th, 77th, 78th, 79th, 80th, 81st, 82nd, 83rd, 84th, 85th, 86th, 87th, 88th, 89th, 90th, 91st, 92nd, 93rd, 94th, 95th, 96th, 97th, 98th, 99th, 100th.

MUSIC.

PLATE III.

THOROUGH BASE.

1 2 3

In the practice of the following pleasing Modulation if no mistake is made the last chord in each circumnavigation will be an Octave above the first.

After exercise of common chords in accompanying the Hexachords in all the keys major and minor to their fundamental bases. In the practice which dots are placed on the notes in the treble that are to be played with the little finger; and though only the first of the Hexachords is given backwards, each of them is intended to be practiced backwards as well as forwards. Italian students in singing are long confined to Hexachords in beginning to Solfeggjari; but chiefly in keys best in tune, as C.E.D.G.

Key of C natural

Do. re. mi. fa. sol. la. La. sol. fa. mi. re. do.

AB. The 3rd of every minor key requires a sharp 3^d

N^o 1. N^o 2. N^o 3. N^o 4. N^o 5. N^o 6. N^o 7. N^o 8. N^o 9. N^o 10.

See Plate IV. for the remaining Keys.

THOROUGH BASE.

N° 14. N° 15. N° 16.

N° 18. N° 19. N° 20.

N° 22. N° 23. N° 24.

** N° 19. The Hexachord. of B♭ minor by mistake has been omitted, but it may be played in these Notes with five flats*

DISSALLOWANCES IN THOROUGH BASE.

No two 5^{ths} or two 8^{ths} must succeed each other, rising or falling together, diatonically.

Dispositions of 5^{ths} and 8^{ths}

For Martini, Allegro di Capriccio.

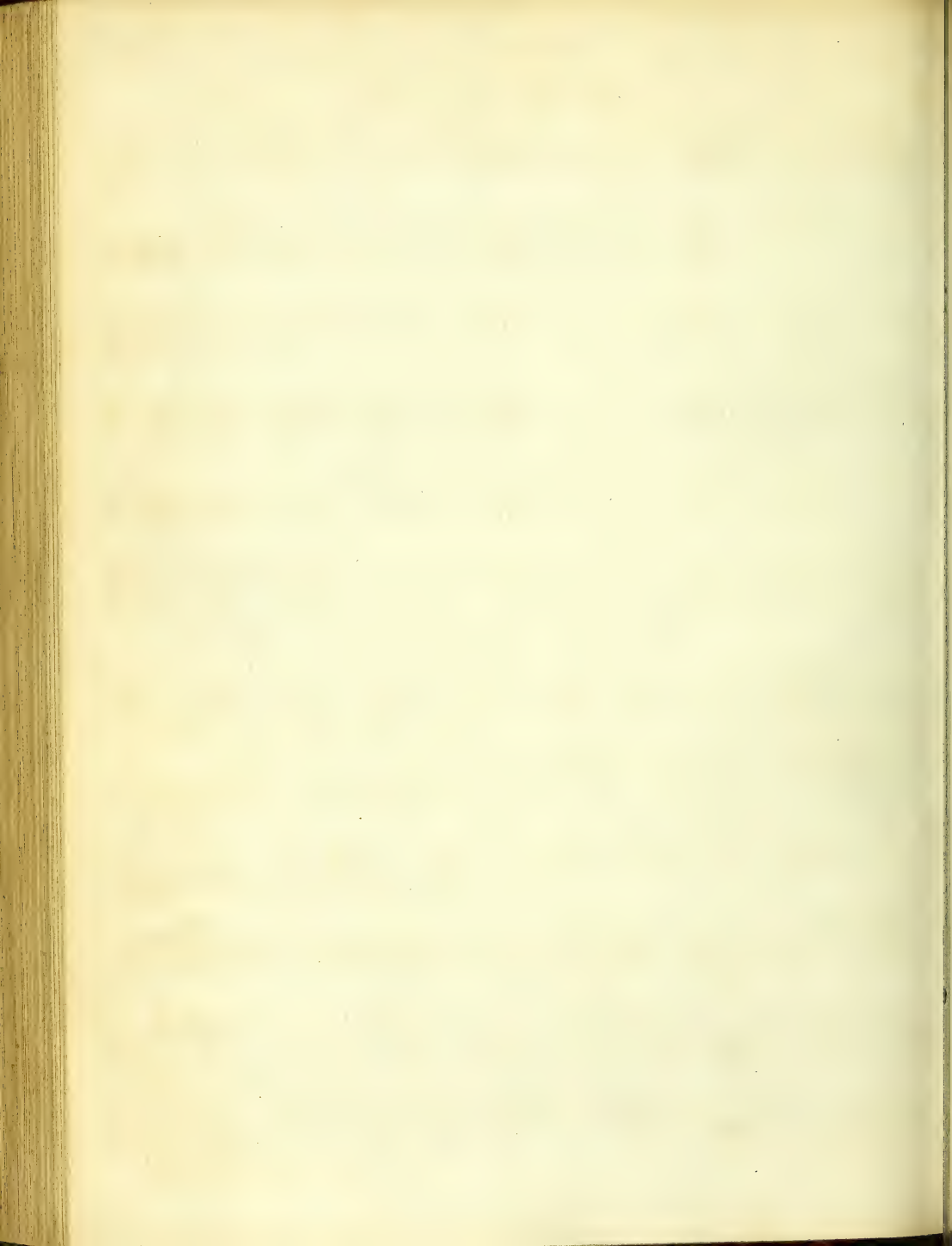
Fouchs

Allowances

Two 5^{ths} if one is false, but better falling than rising

Two 8^{ths} by contrary motion.

Two 5^{ths} by D^c



THOROUGH BASE.

CARDS.

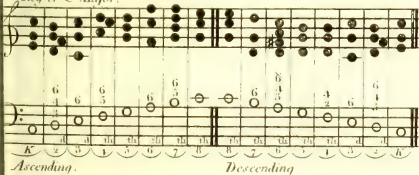
The 3^d, 5th & 8th singly or together imply the
COMMON CHORD.

<i>The Chord of the</i> 6th 6 8	<i>is common</i> <i>below the</i> <i>Chord to the</i> 3^d <i>Base.</i>
6 4	<i>Ratio to the</i> 5th <i>below.</i>
7 5	<i>is added to the Common Chord</i>
6 5 8	<i>Chord of the</i> 7th <i>to the</i> 3^d <i>below the Base.</i>
6 4 5	<i>Ratio to the</i> 5th <i>below.</i>
4 2 7	<i>Common Chord to the Note</i> <i>above the Base.</i>
7 4	<i>Ratio to the Note below</i>
4 5 3	<i>taken instead of the</i> 3^d
9 5 3	<i>instead of the</i> 8th
9 4	<i>the Sounds of the preceding Chord</i> <i>and always in the Hand.</i>
9 7	<i>Ratio Accompanied by the</i> 5th
5 2 7 4 2	<i>Accompanied by the Octave</i> <i>of the</i> 2^d <i>or of the</i> 5th
	<i>a new combination</i>

In general the Use of Figures in Accompaniment is only to express such Sounds as differ from the COMMON CHORD.

*a Regle de l'Octave, or a rule for accompanying each sound
of the Musical Scale, without figures, ascending and descending*

Key of C Major.



Key of A Miner.



Ascending. Descending.

An Accidental \sharp note in the base is accompanied by the $\frac{6}{5}$ & changes the key, generally, to the *hah'-note* above such sharp.

In Accidental that note is generally accompanied by a \sharp & changes the Key to the 4th below such that.

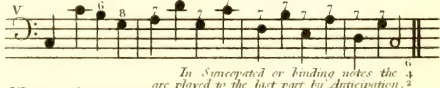
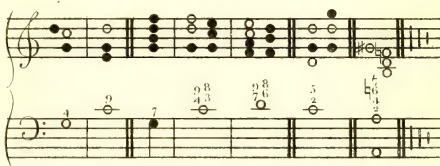
To the 5th of a Key it repeated at a close two Chords are generally played: 4. 3 & sometimes the 7th with the Common Chord

When the base moves per altum a 3rd, 4th, 5th, or 6th, common Chord will do
When the base rises a 4th & falls a 5th ultimately, & the contrary, each note
may be accompanied by the chord or the 2nd

Example in Notes.



Fundamental Base



In *Simcepatad* or *binding* notes the
are played to the last part by *Anticipation*.²



Slow notes of this kind
may be thus accompanied

*Aspergillus*

COUNTERPOINT.

I **II** **III**

Natural Harmony

Thirce stop in the Organ, moving by major 17th with the Diapason

Harmony of 3rd & 6th in succession

Diapason

10th octaves of 3rd

6th in succession

IV **V**

Scale of C major Ascending

A Minor descending

Key

Fundamental base to the Treble Scale

Minor Scale



COUNTERPOINT.

I

disant
C Major

Ascending Scale in the base *descending*

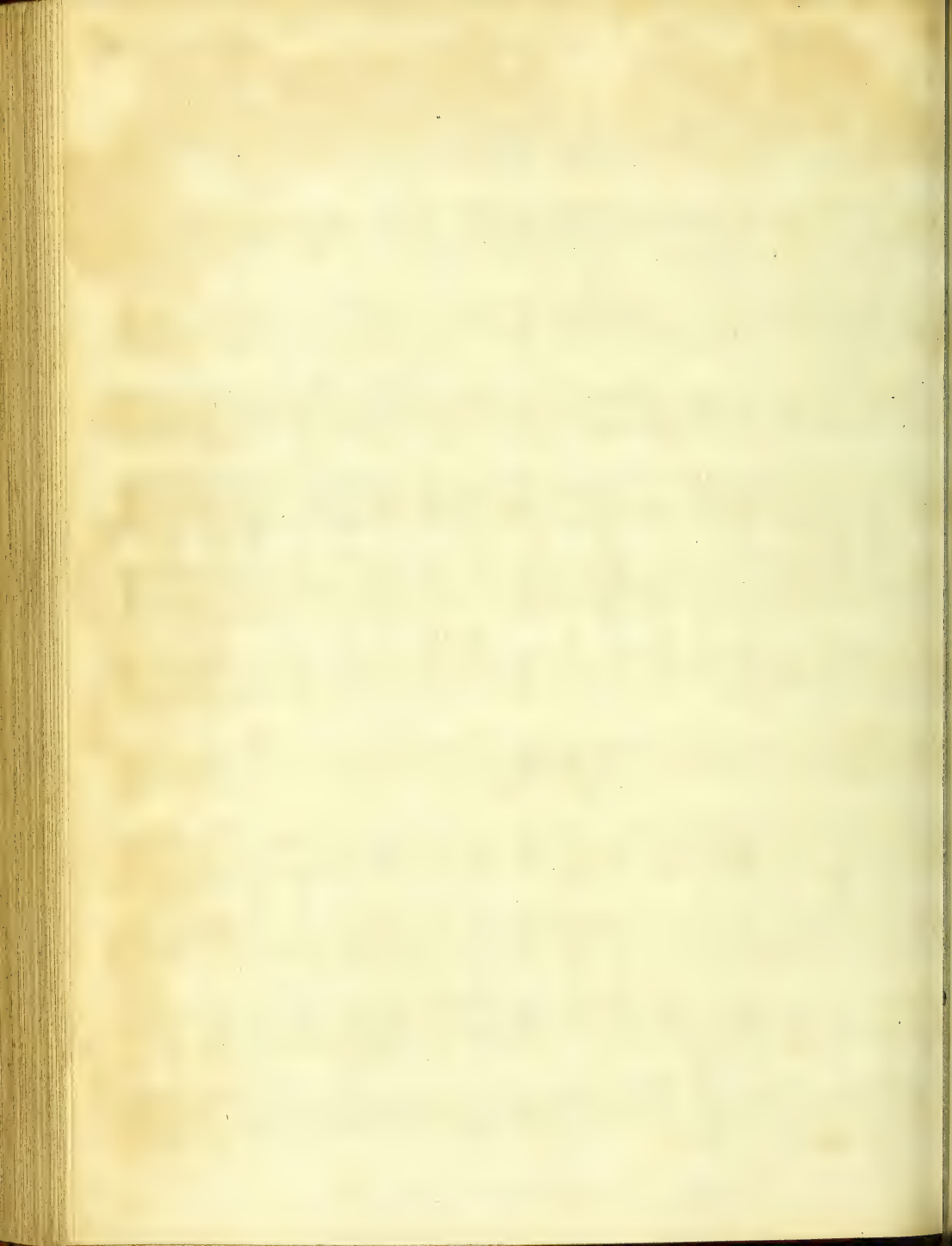
II

A 3rd part in disant to a series of 3rds and 6^{ths}

III

Scale in 3 parts with a supposed base.

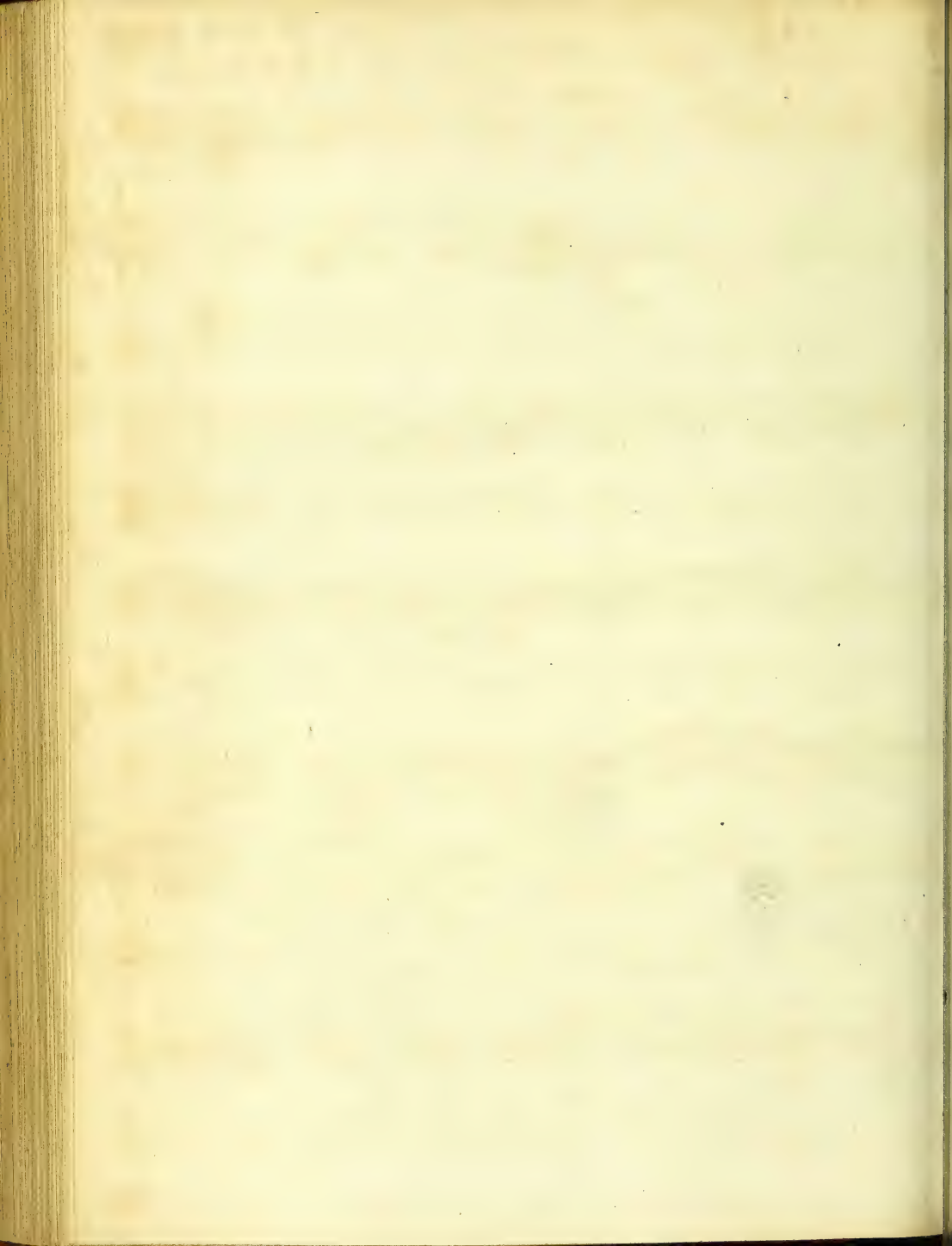
Basso continuo



COUNTERPOINT.

Scale.

*Division base to the Major Scale.**To the Minor Scale*



vers to regular Fugues must be in the Unison, the 8th, 5th, or 4th, in order that they may proceed in the same intervals as the subject.

Sala

Unison in
2 Parts

Pepusch

above

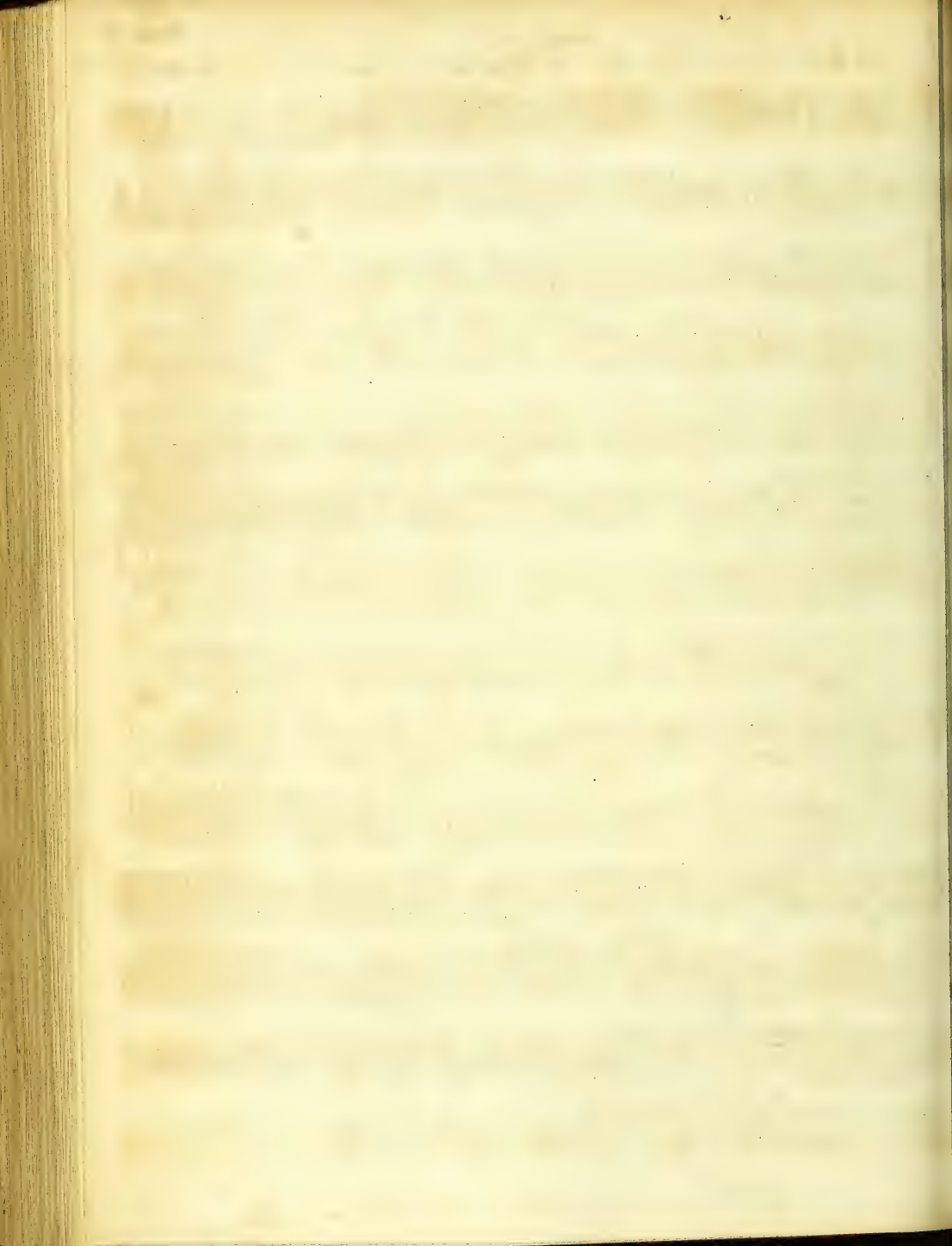
below

below Sala

Two subjects

below

unison



Sala

Introduction to the manner of disposing the several parts in Fugues à 3.

2 Subjects.

1.st Subject.

2.^d Subject

1.st answer

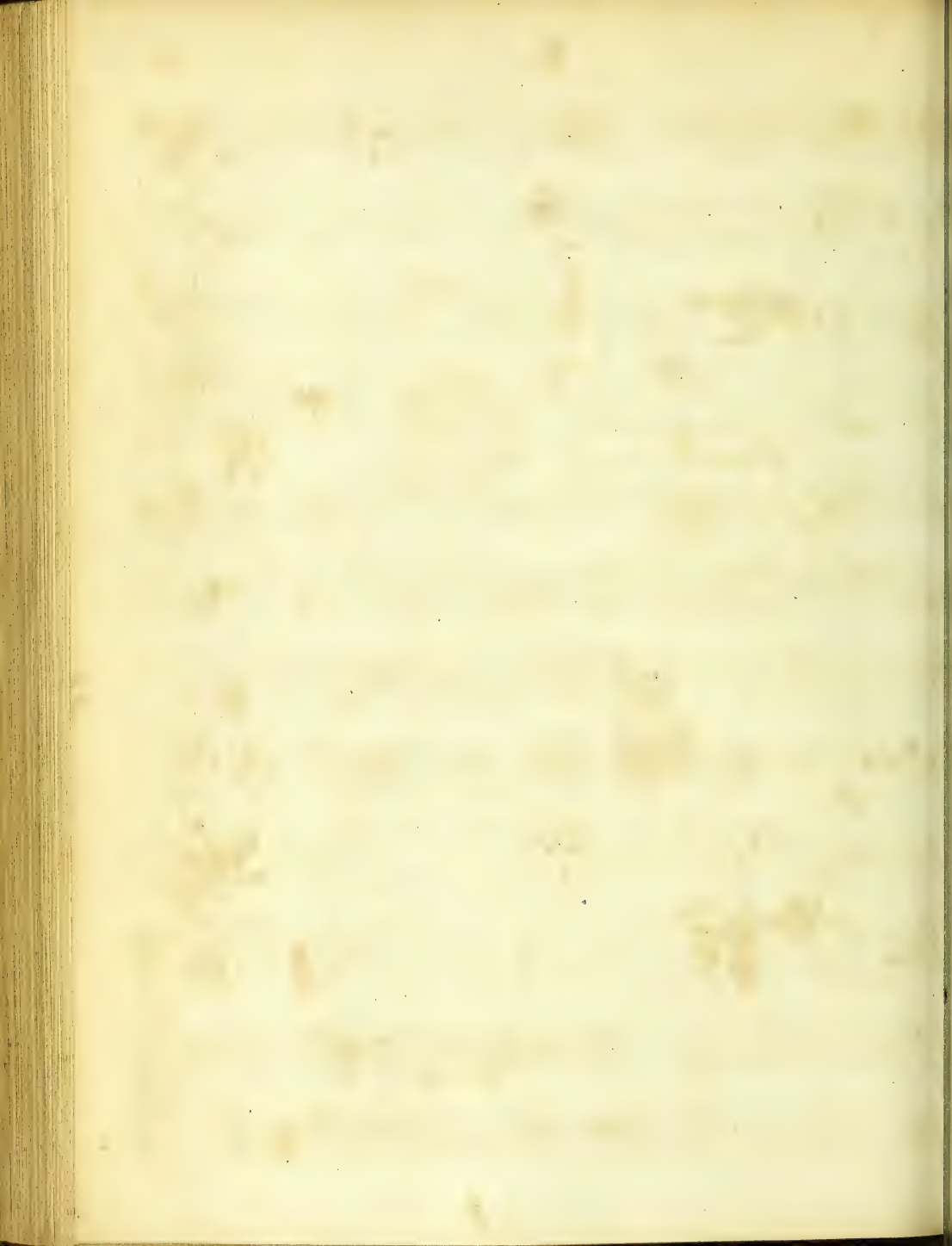
2.^d answer

Arrangement of the parts in Fugues à 4. for Voices, where 3 Tenor clefs are used.



COUNTERPOINT.

*Instrumental parts.**Violino 1^{mo}**Violino 2^{do}**Viola.**Vcllo.**Subject of a Chromatic vocal Fugue in 4 parts.**The manner of answering a Chromatic Fugue in contrary motion and direct.*



COUNTERPOINT.

2 fundamental bases

3 fundamental bases

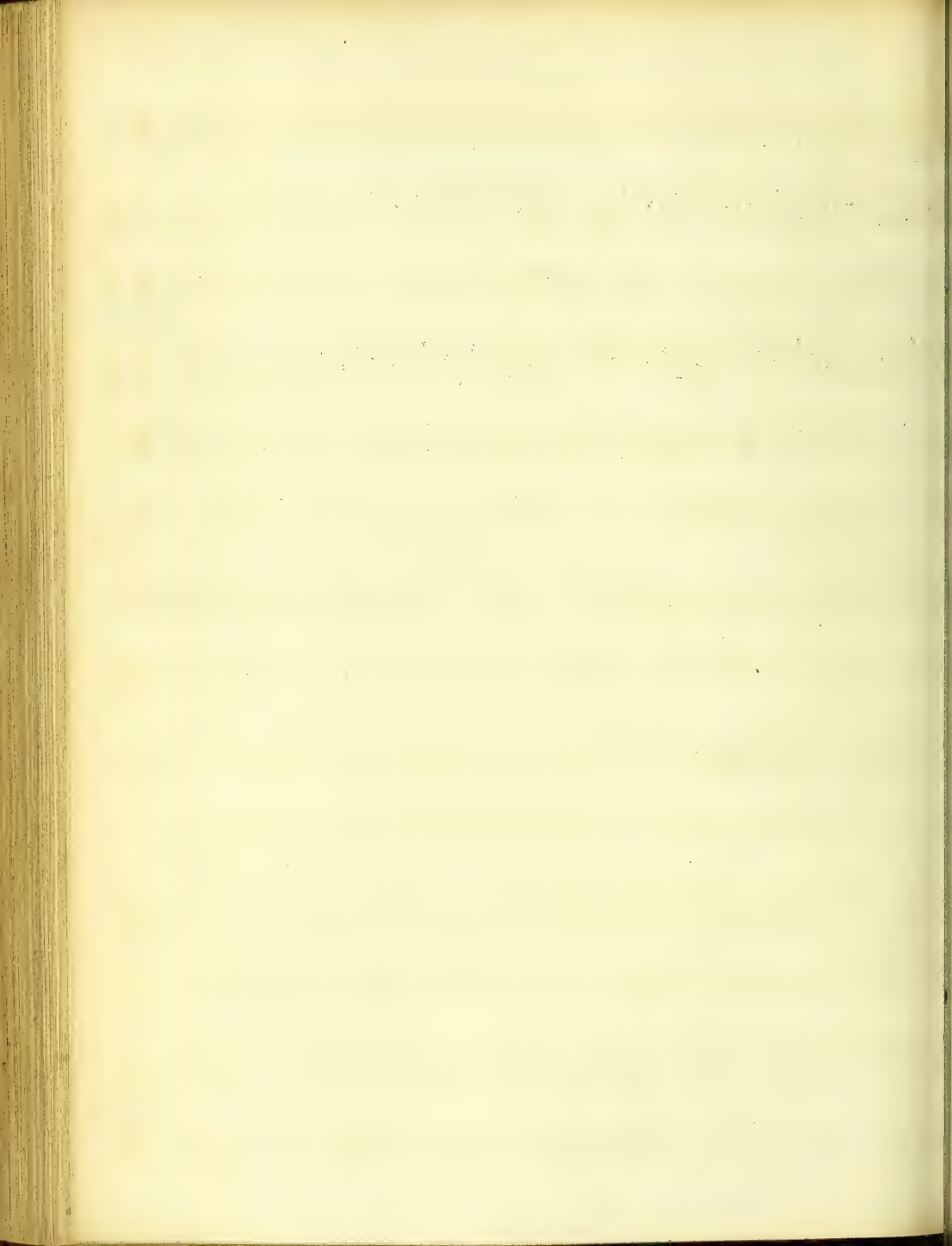
Regole di Contrappunto

stances in 2 parts

3 parts

4 parts

The Scale in 2 parts, inverted in double counterpoint, beginning & ending in the G note against note.



COUNTERPOINT.

The Règle de l'Octave in 4 parts.

1st Treble

2nd Treble

3rd Treble

Bass

C Major

C Minor

2 Bases to one Base

2 Bases to one Treble

3 time

4 time

The musical score is arranged in systems. The first system shows the initial key signature change from C Major to C Minor. The second system contains exercises for '2 Bases to one Base' and '2 Bases to one Treble'. The third system is marked '3 time' and the fourth '4 time'. The notation includes various musical symbols such as notes, rests, bar lines, and clefs.



PLATE XIV.

Preparation and Resolution of Discords.

This page contains musical notation for the 'Preparation and Resolution of Discords' section. It features a grand staff with two systems of staves. The first system includes a vocal line (Soprano, Alto, Tenor, Bass) and a piano accompaniment (Right and Left Hand). The second system includes a vocal line (Soprano, Alto, Tenor, Bass) and a piano accompaniment (Right and Left Hand). The notation includes various musical symbols such as notes, rests, and accidentals, along with figured bass notation (numbers 1-7) indicating fingerings or intervals. The title 'Preparation and Resolution of Discords' is written at the top of the page.

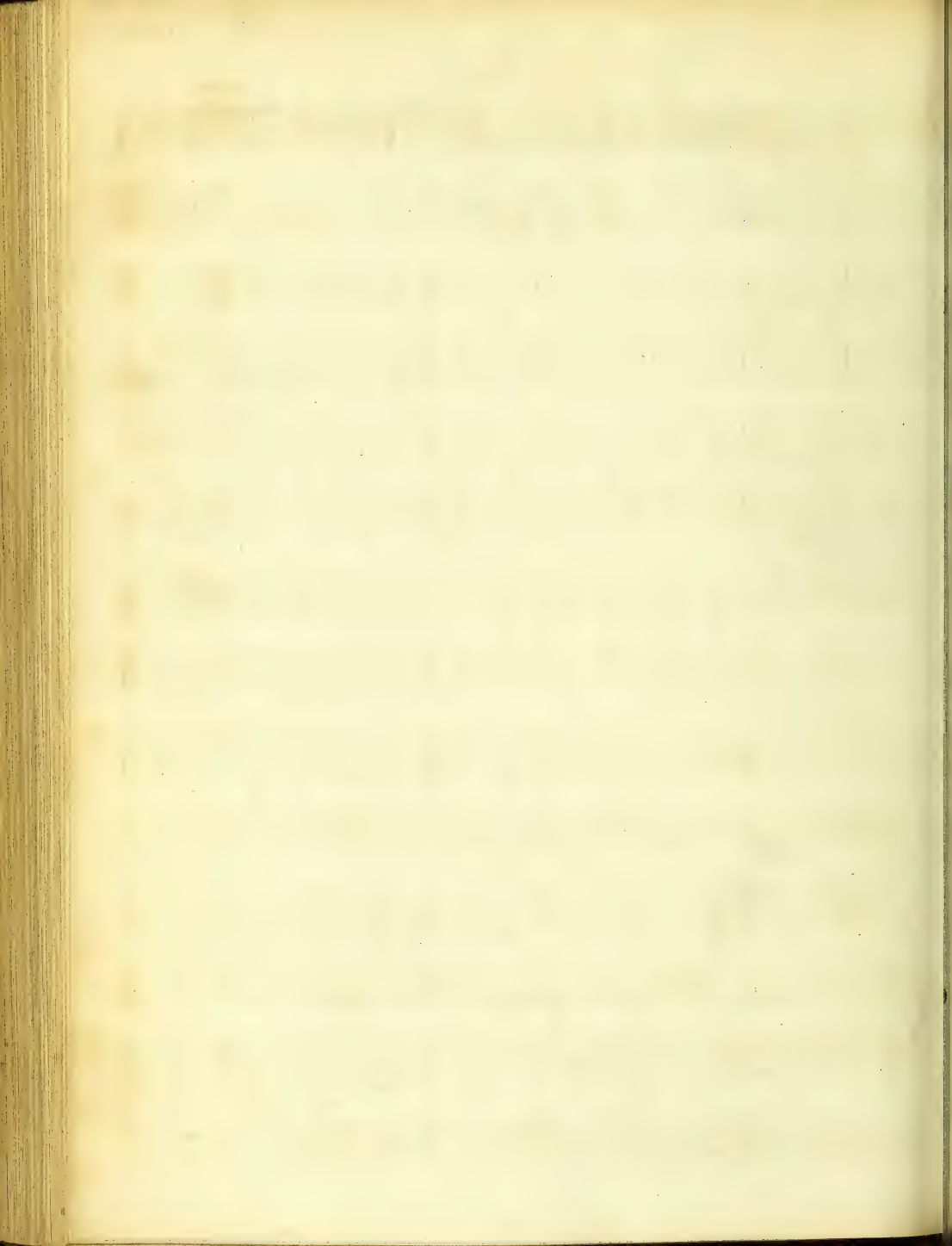
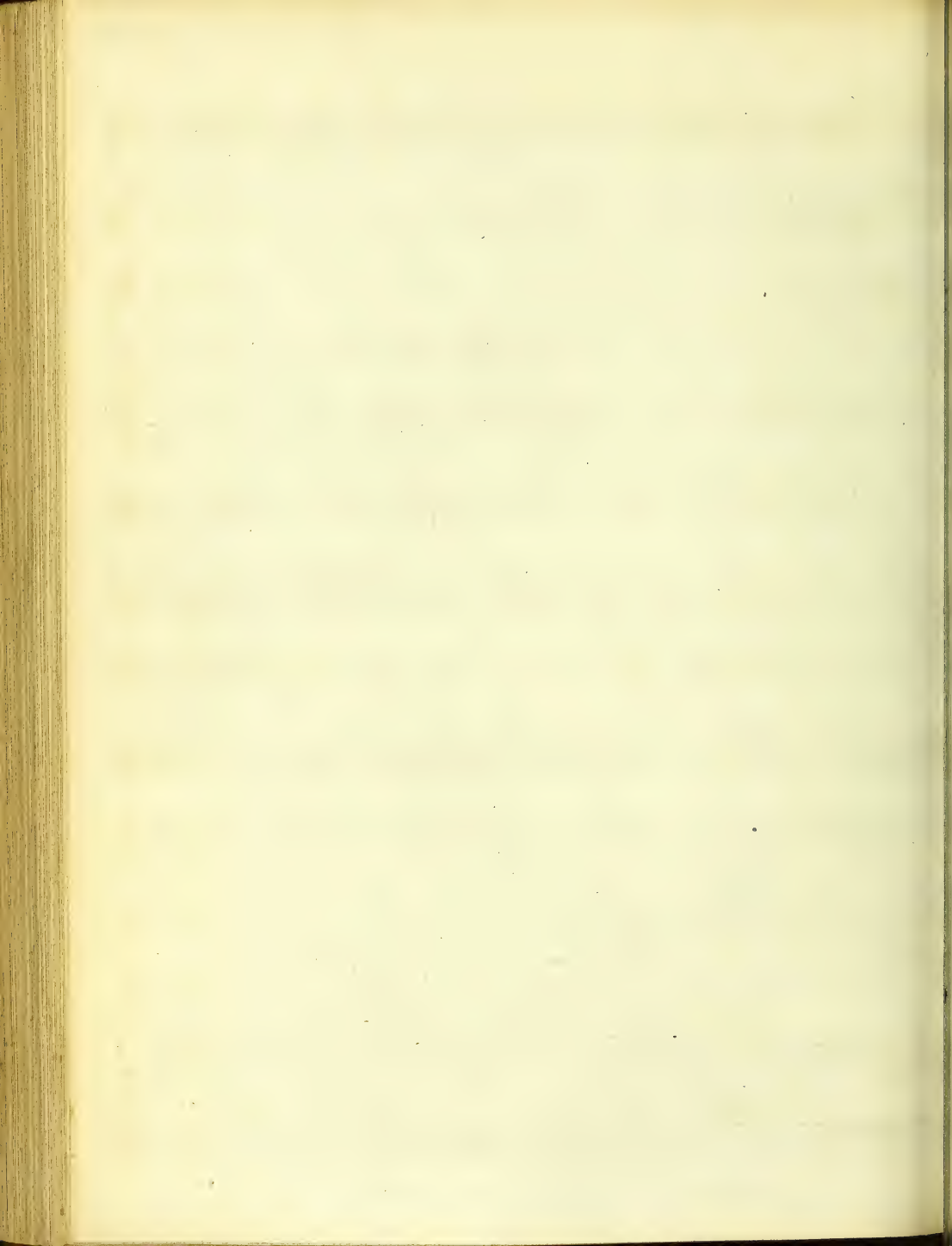
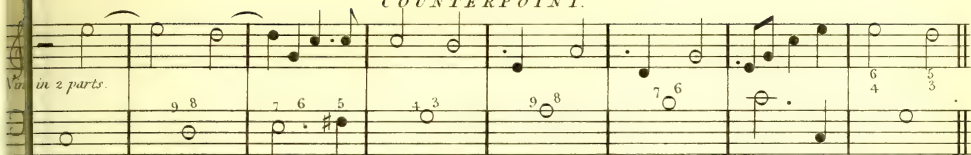


PLATE XV.

4th *Ende a Discord by the 6th*



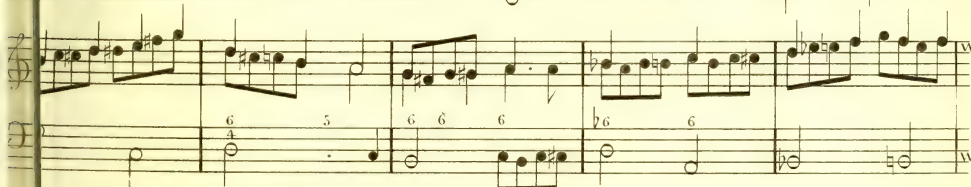
COUNTERPOINT.



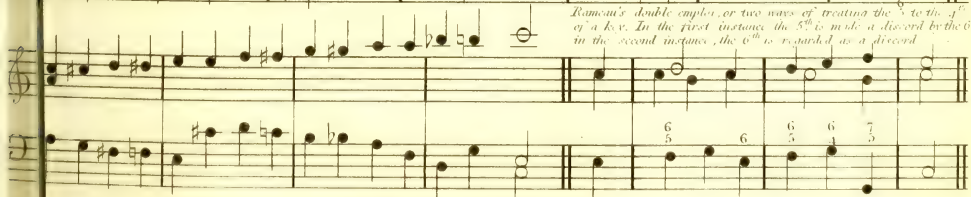
No Ninth can be used in the descending Scale, as it cannot be properly prepared.



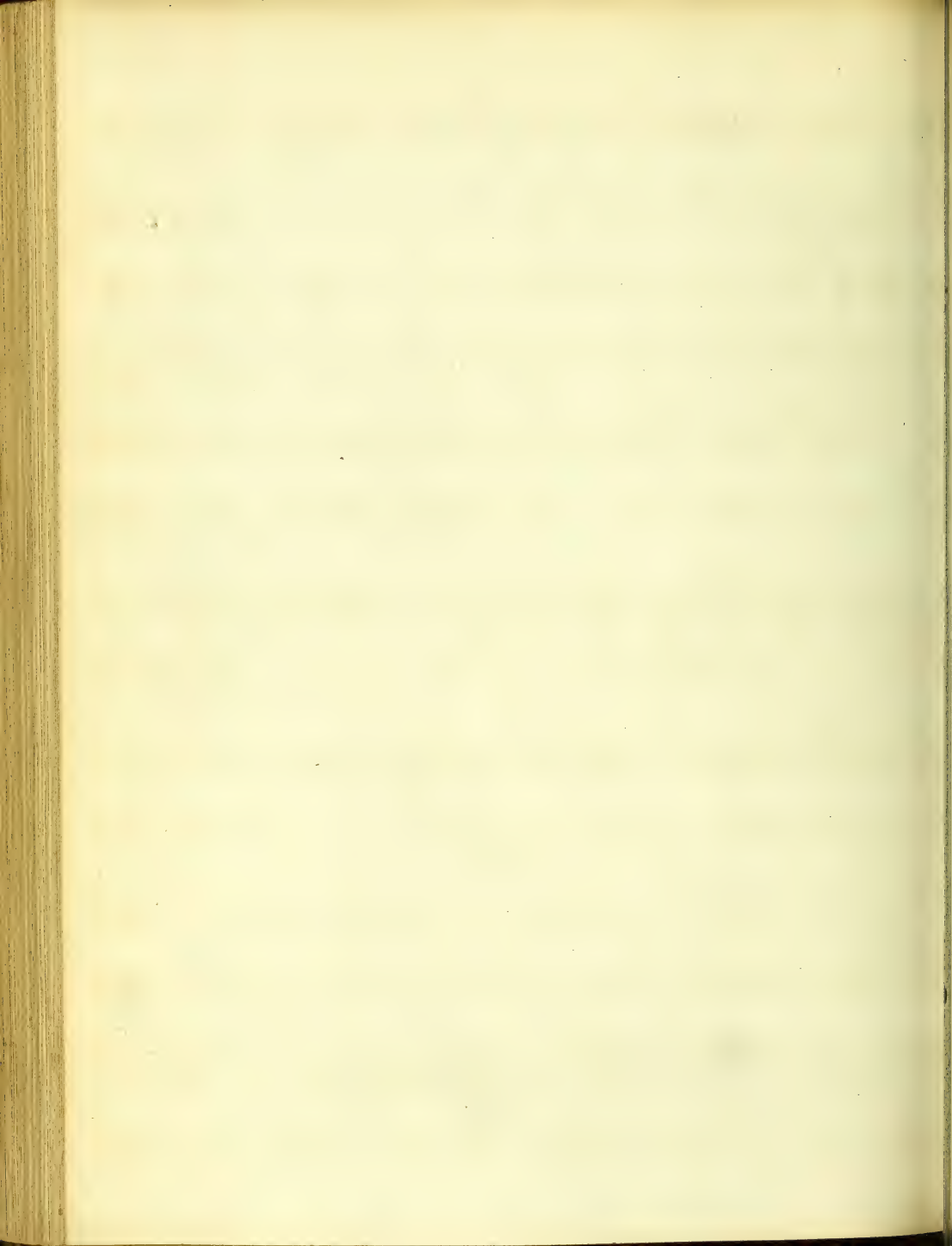
Essential Notes. The notes with the tails upwards are all that are essential to the harmony of the base, the rest are Passing-Notes.



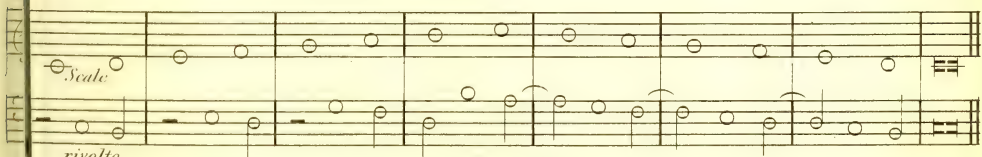
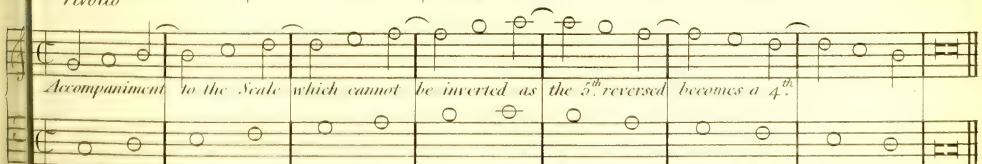
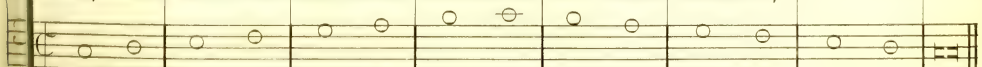
Supposed base to the Chromatic Scale.

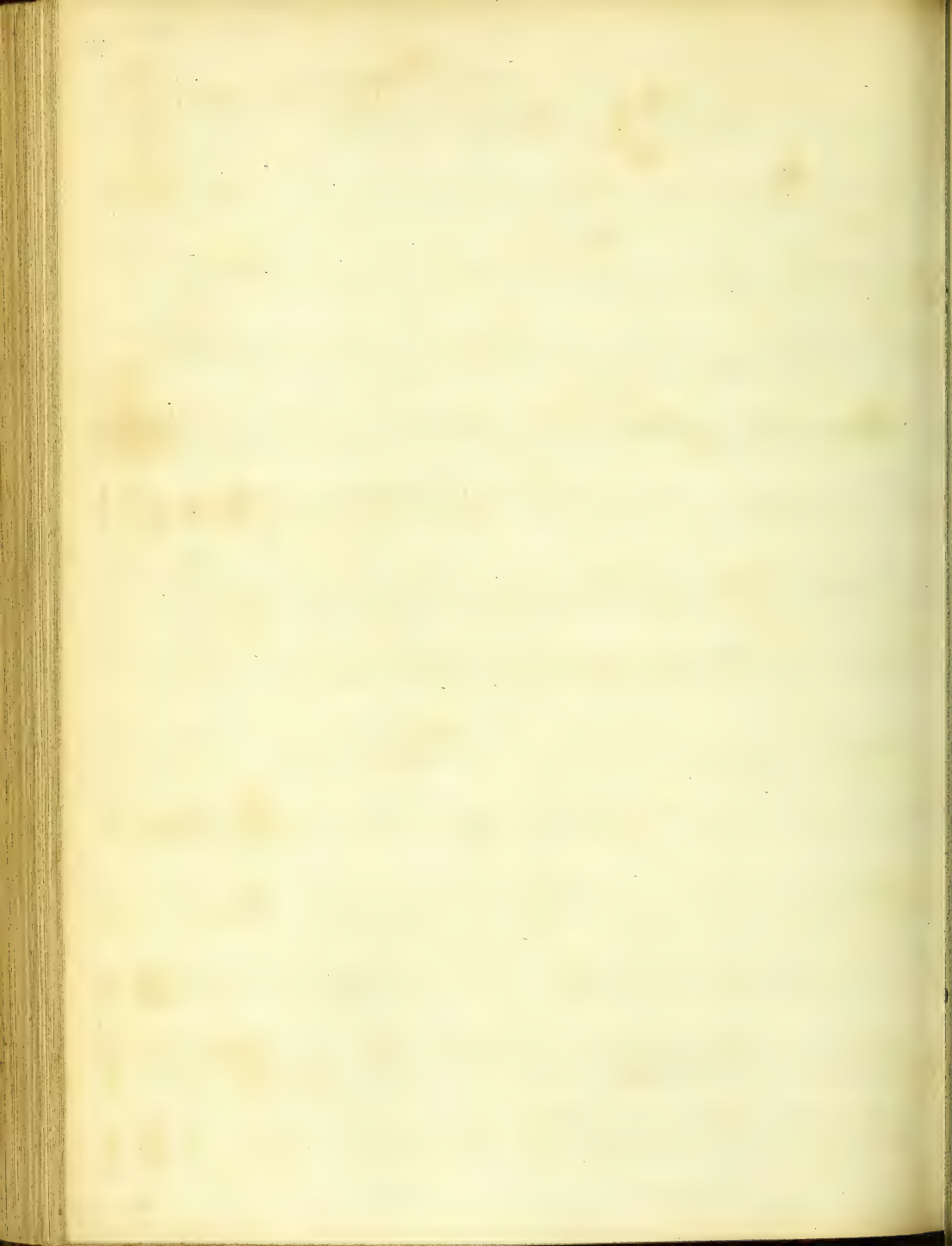


Ramoni's double eighth, or two ways of treating the 5th to the 4th of a key. In the first instance the 5th is made a discord by the 6th in the second instance, the 6th is regarded as a discord.



DOUBLE COUNTERPOINT IN THE OCTAVE.

two Notes to one*Scale**Inverted**four to one**Scale**riolto**Accompaniment to the Scale which cannot be inverted as the 5th reversed becomes a 4th.*



*Contrappunto doppio, in genere Cromatico.**Moderato*

This musical score is for a double counterpoint exercise in a chromatic style, marked 'Moderato'. It is written for two voices, likely Soprano and Alto, on a grand staff. The key signature is one sharp (F#), and the time signature is common time (C). The score consists of 16 measures, organized into four systems of four measures each. The notation features a variety of rhythmic values, including eighth, sixteenth, and thirty-second notes, as well as rests. The chromatic nature is evident in the frequent half-step movements between notes. The piece concludes with a double bar line at the end of the fourth system.

Coda



Contrappunto doppio, in genere Cromatico. a. basso.

Trio di M.etto.

pia

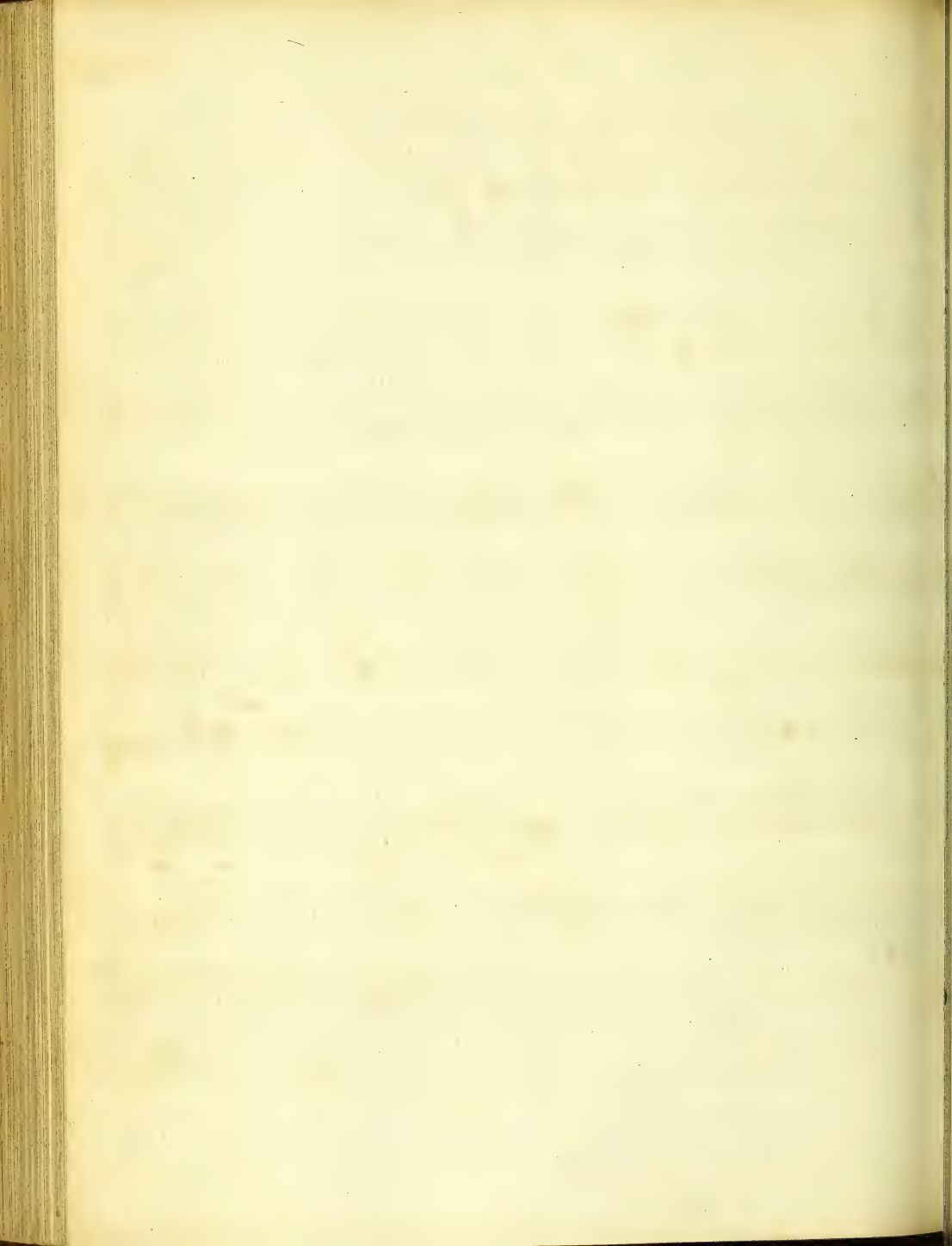
for

pia

for

dimin. e rallentando

pia



MUSIC.

PLATE XI.

Contrappiùto doppio in genere Cromatico, continued.

for

p.

p. p.

dim. c rall.

sf



MODULATION.

In the ascending Scale only three Notes are in one Key.

Accompaniment to the ascending Scale in the base, in relative sounds without Modulation.

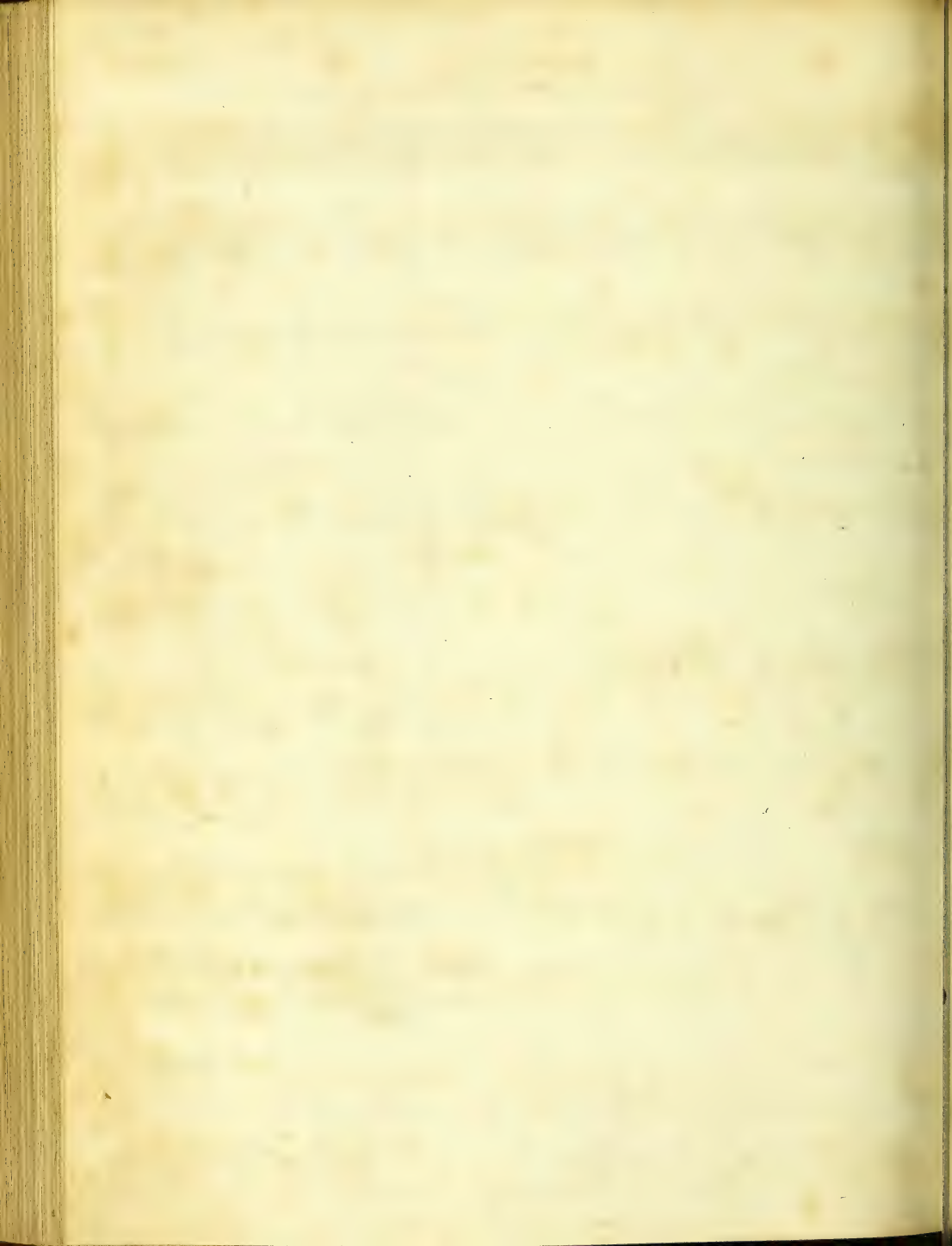
Accompaniment to the Scale with Modulation.

Modulation.

Corelli

Unrelative Modulation. Pergolesi.

Mozart.



MUSIC.

PLATE XIII.

Modulation from a given Note to every species of Interval in the Octave.

to C[#] or D^b and back again.

This section contains five staves of musical notation. Each staff begins with a key signature change (C[#] or D^b) and is followed by a series of notes with figured bass (fingerings) indicating intervals. The exercises are labeled: 'C to D^b', 'C to E^b', 'C to F^b', 'C to G^b or A^b', and 'C to A^b'. The notation includes treble and bass clefs, key signatures, and various note values (half, quarter, eighth notes) with corresponding fingerings (1-7) written above or below the notes.

Passing Notes.

*Relative Keys
immediately*

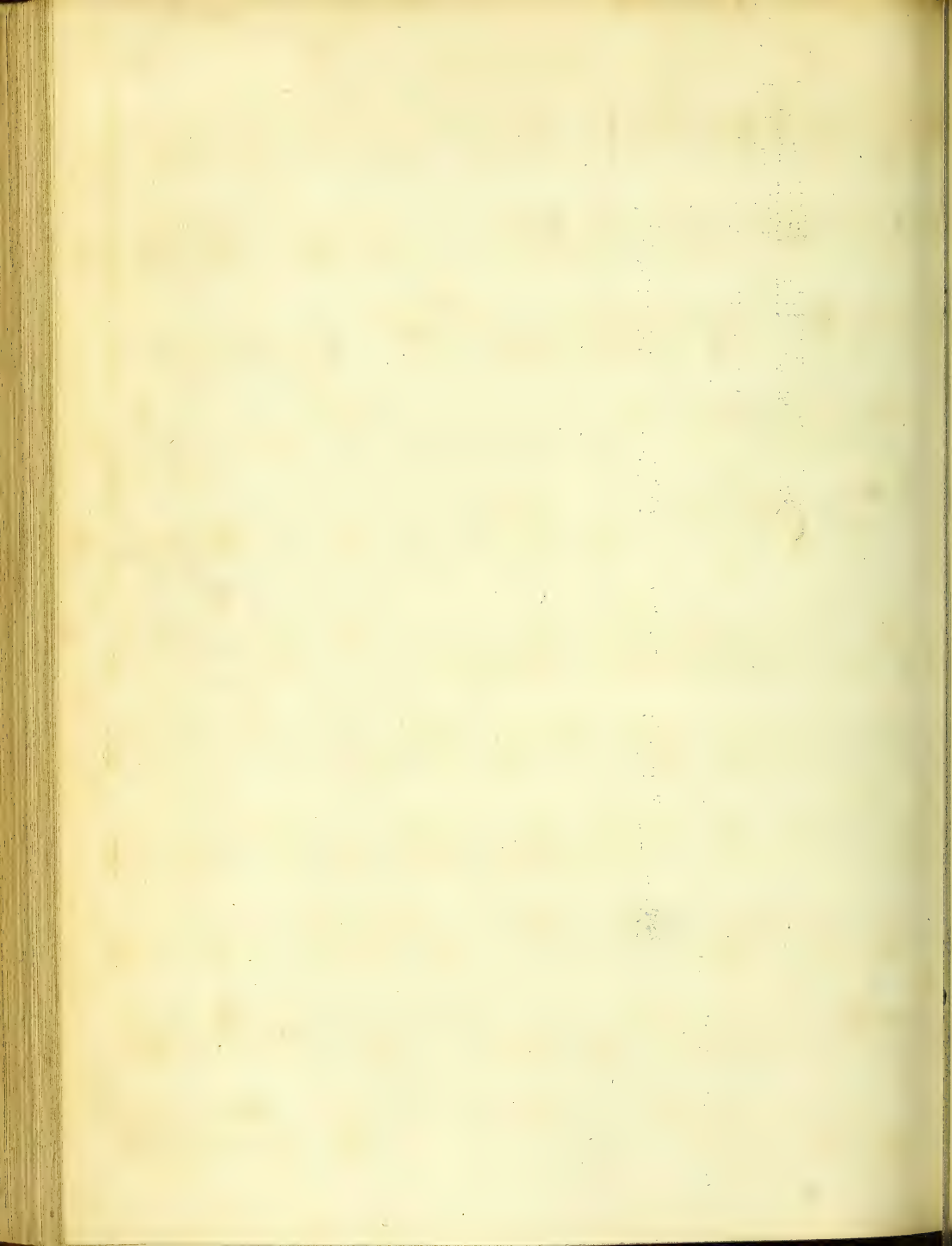
mediately

North-West passage to the half Note below any Key.

This section contains three staves of musical notation. The first staff is labeled 'Relative Keys immediately' and shows a sequence of chords and notes. The second staff is labeled 'mediately' and shows a sequence of notes with fingerings. The third staff is labeled 'North-West passage to the half Note below any Key' and shows a sequence of notes with fingerings. The notation includes treble and bass clefs, key signatures, and various note values (half, quarter, eighth notes) with corresponding fingerings (1-7) written above or below the notes.

Disappointed Closes.

This section contains two staves of musical notation. The first staff is labeled 'Disappointed Closes' and shows a sequence of notes with fingerings. The second staff shows a sequence of notes with fingerings. The notation includes treble and bass clefs, key signatures, and various note values (half, quarter, eighth notes) with corresponding fingerings (1-7) written above or below the notes.

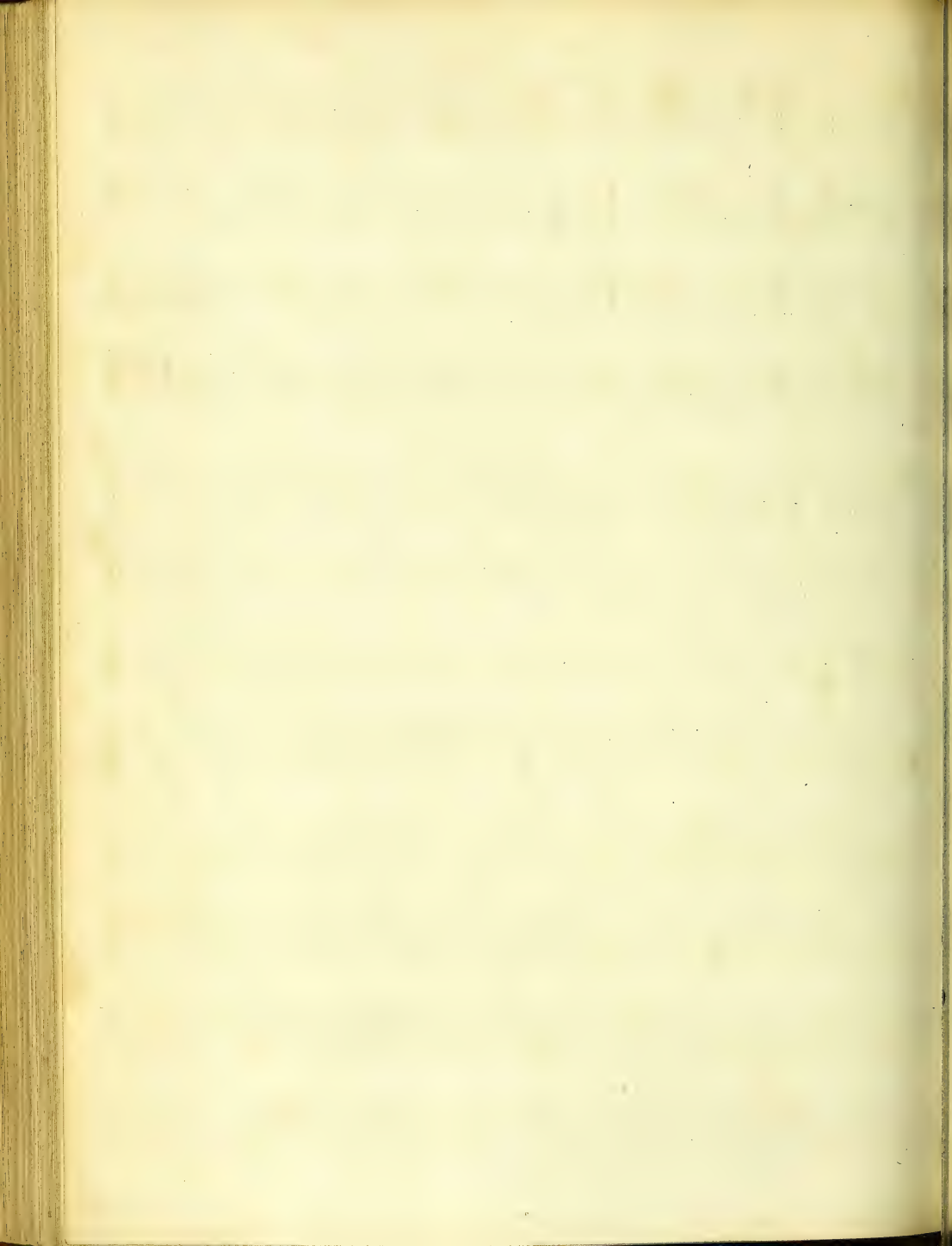


Rousséau's regular Modulation in the Key of C Major.

C to G C A C E C F C D

A C A E A D A F A F

Kirnbberger's two essential Chords.
Kirnbberger's examples of the first use of Discords.



of the Chord of the extreme flat 7.th commonly called the enharmonic Chord.

The best Notes of these Chords may be regarded as the Tenor part in octave with the Base.

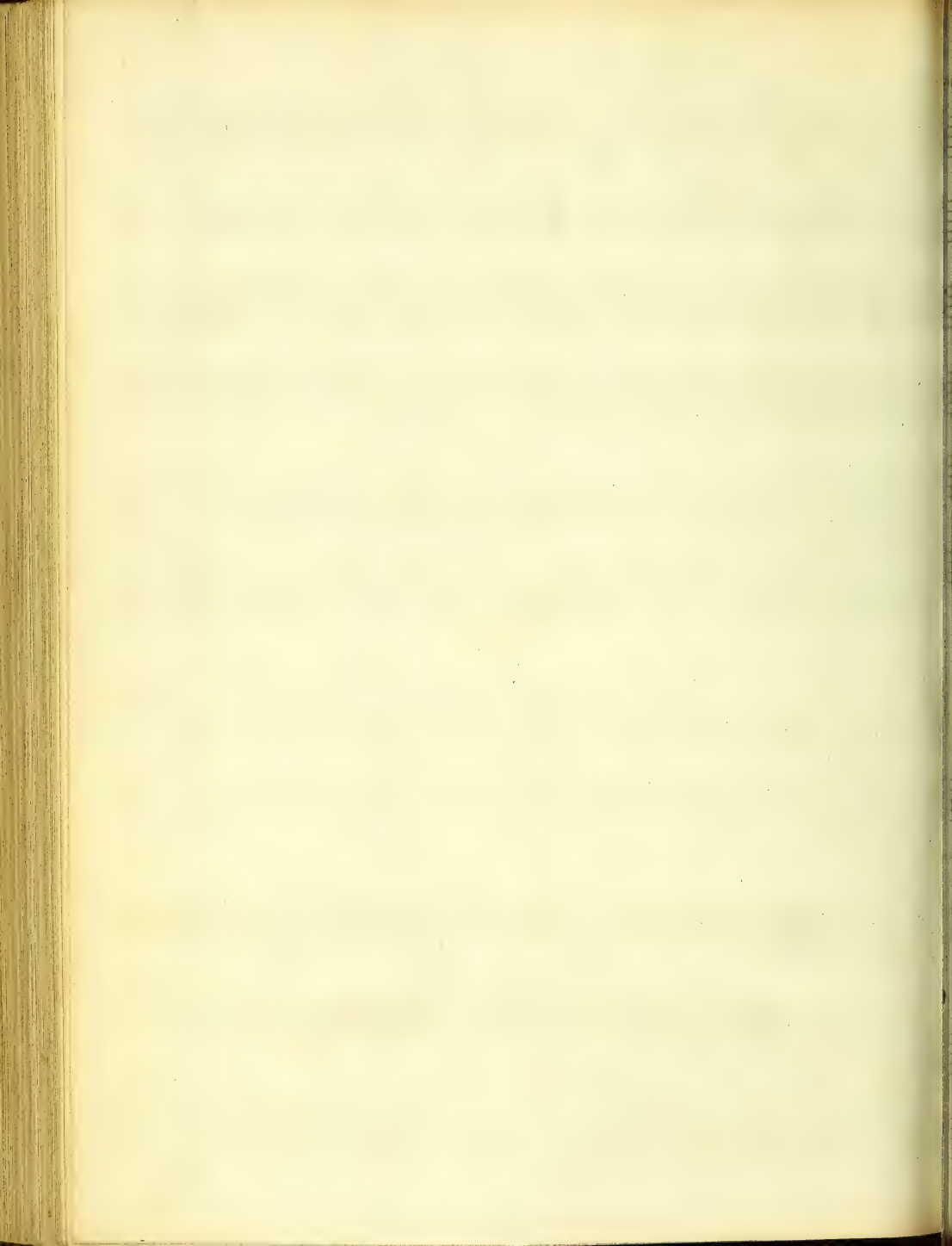
chromatic in flats.

Notes.

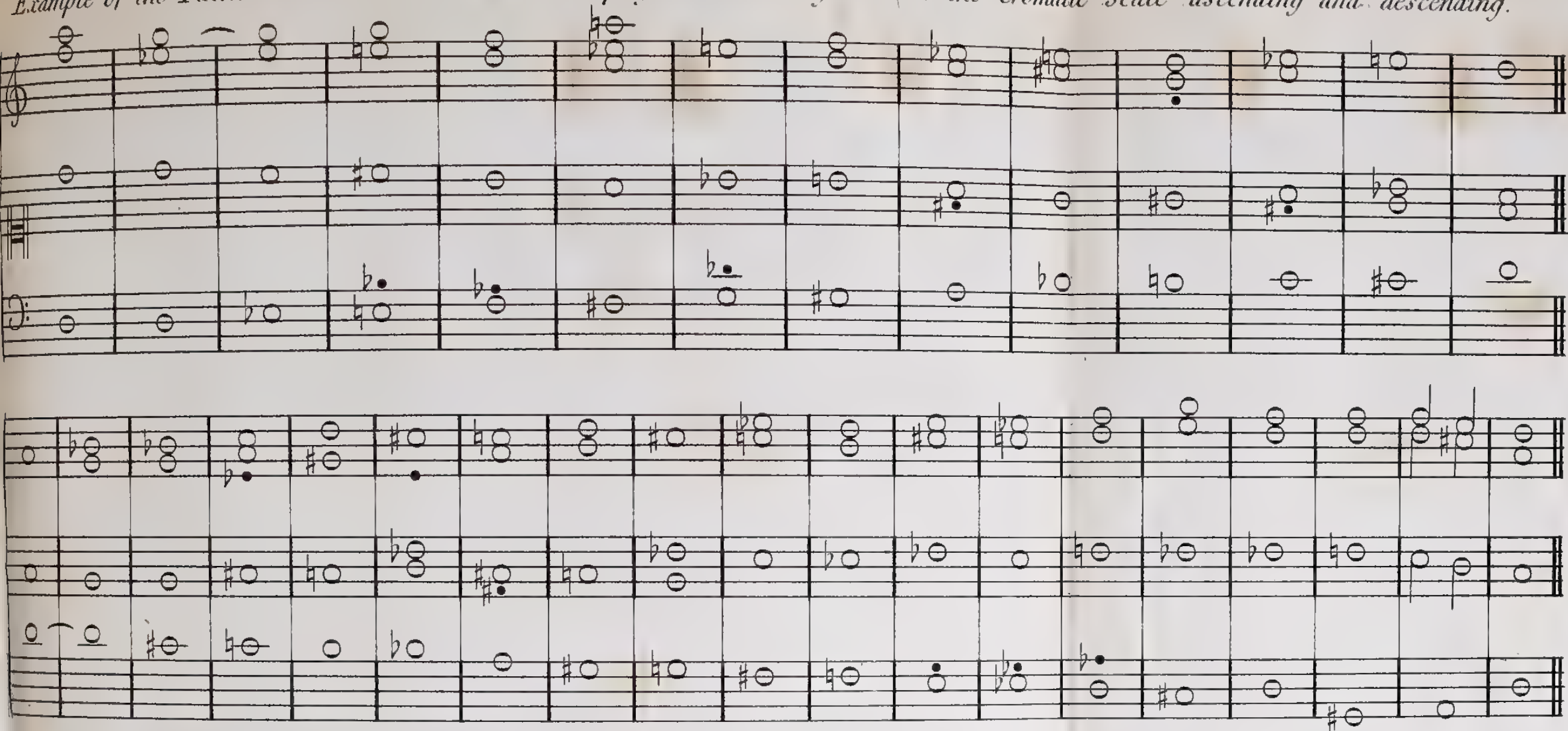
duo in A Minor à tre.

à quatre

Scale by true 5th in the triple progression, without double flats or sharps.

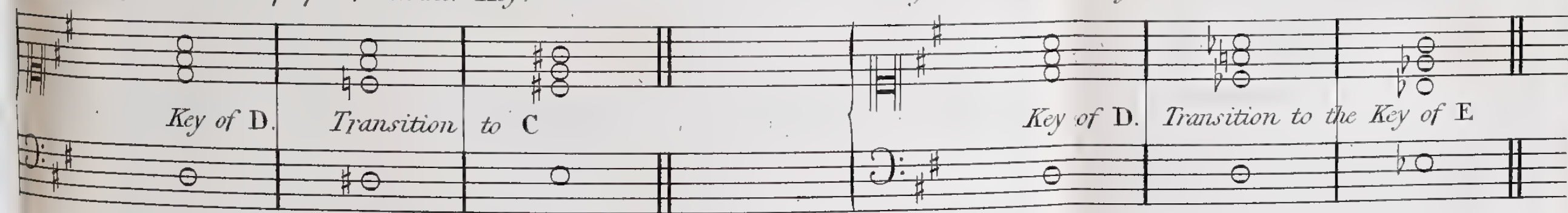


Example of the Pathetic Genus, in which are expressed its successions in the Chromatic Scale ascending and descending.



First example of passing immediately from a Key-Note to the sharp 7th of another Key.

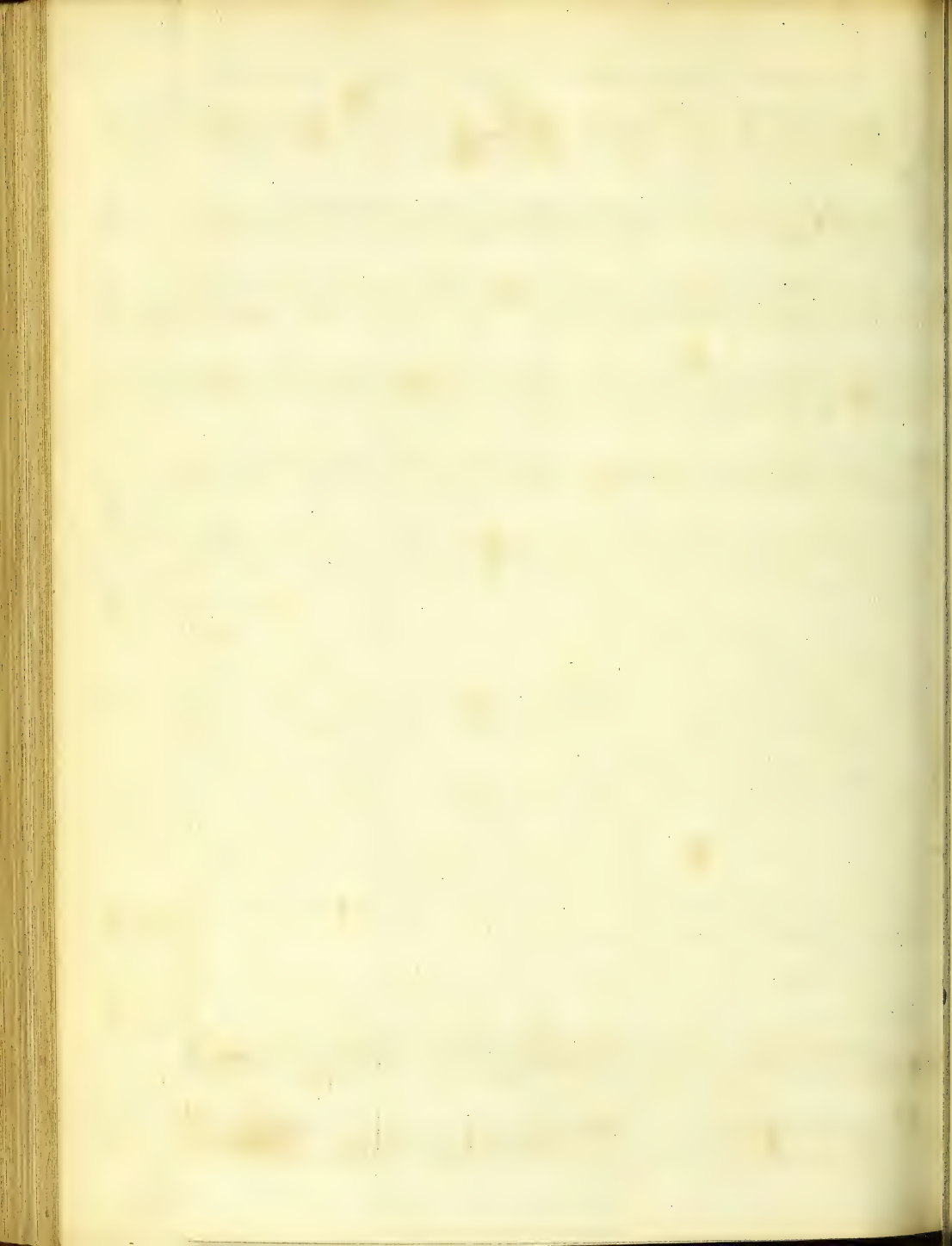
Second example, immediately passing from any Key-Note to the key of its flat 2^d.



It must be observed, that to feel the effect of this sudden modulation, it is necessary to remain a little while upon the second Chord, before we pass to the third. This tends to another Theorem, which few Musicians will dispute, namely, that there is one note in the harmony of every Chord which suits with every kind of movement, and another harmony quite different, which belongs only to Adagios. The Pathetic Genus appertains only to that.

Acciaccature





MUSIC.

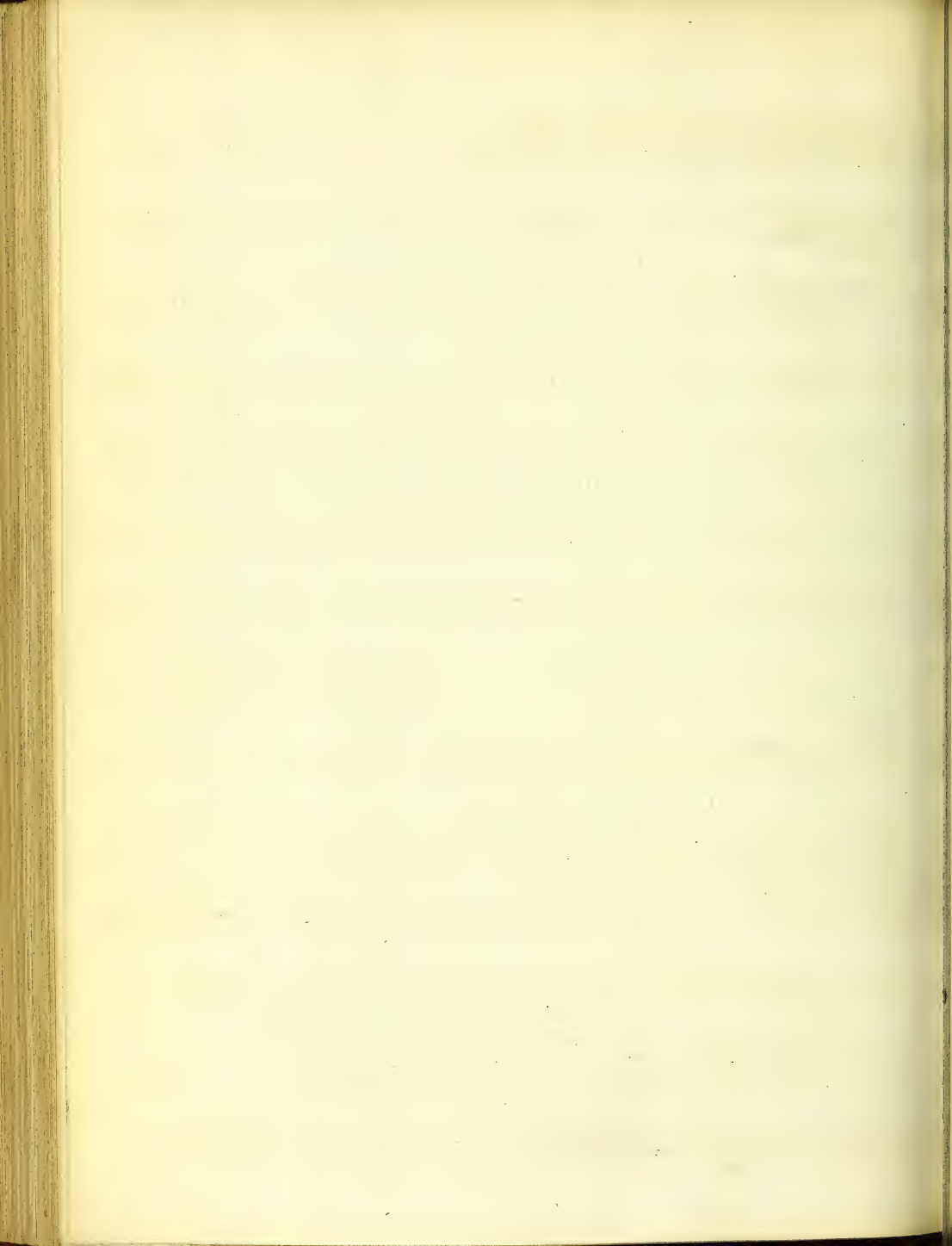
PLATE LVII.

FINGERING ON KEYED-INSTRUMENTS.

Position of the hands.

Ascending & descending 2 Notes, the two parts to be practiced separately.

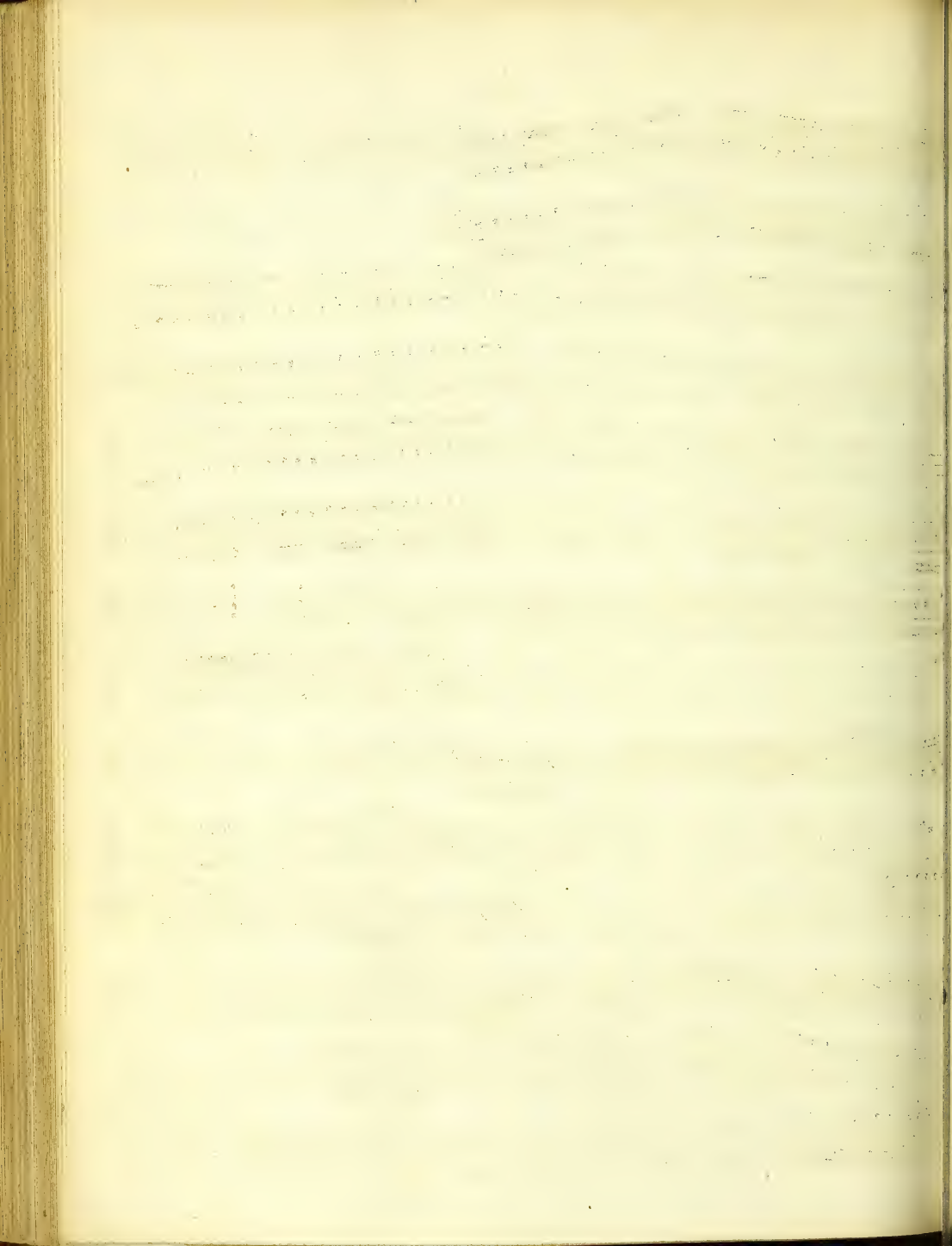
The musical notation consists of multiple staves, each containing various musical exercises. The exercises are primarily ascending and descending scales and patterns, often marked with slurs and articulation marks (dots above notes). The notation includes various fingerings (e.g., 1, 2, 3, 4, 5) and specific instructions for practicing two parts separately. The page is labeled 'PLATE LVII.' and 'FINGERING ON KEYED-INSTRUMENTS.'.



Iteration in Fingering.

Abbreviations

[illegible]



MUSIC.

PLATE XIII.

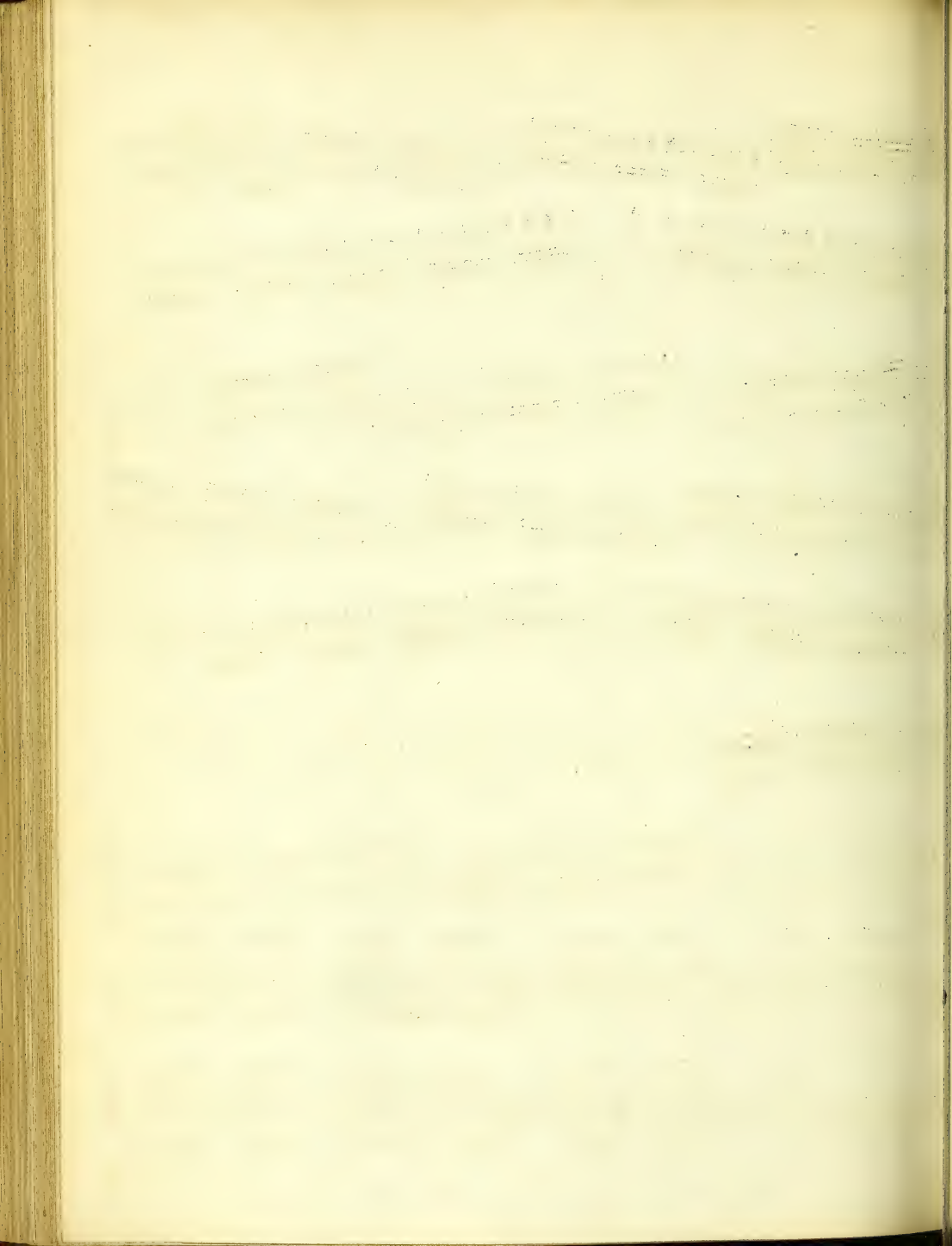
Fingering of semitonic or chromatic divisions.

Right hand.

Left hand.

Exercises for the hands.

Double Notes.



SHAKES.

Shakes

tenute

double Shake

Begin the Shake with the Note itself unless there is an Appoggiatura

Spinning Shakes turned

Ancient Shakes

Effect

Effect

Rolls

Effect

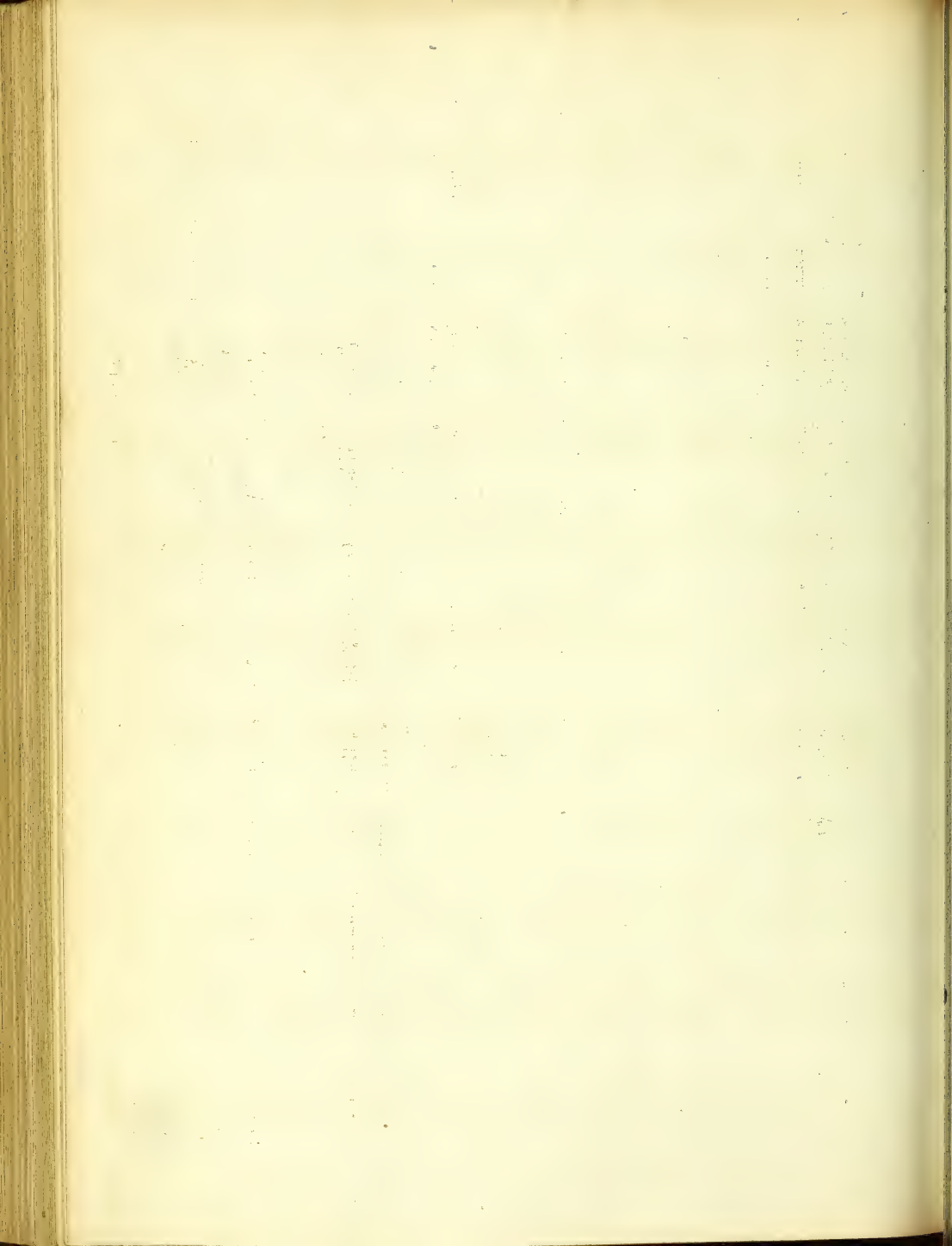
+1234 4321+

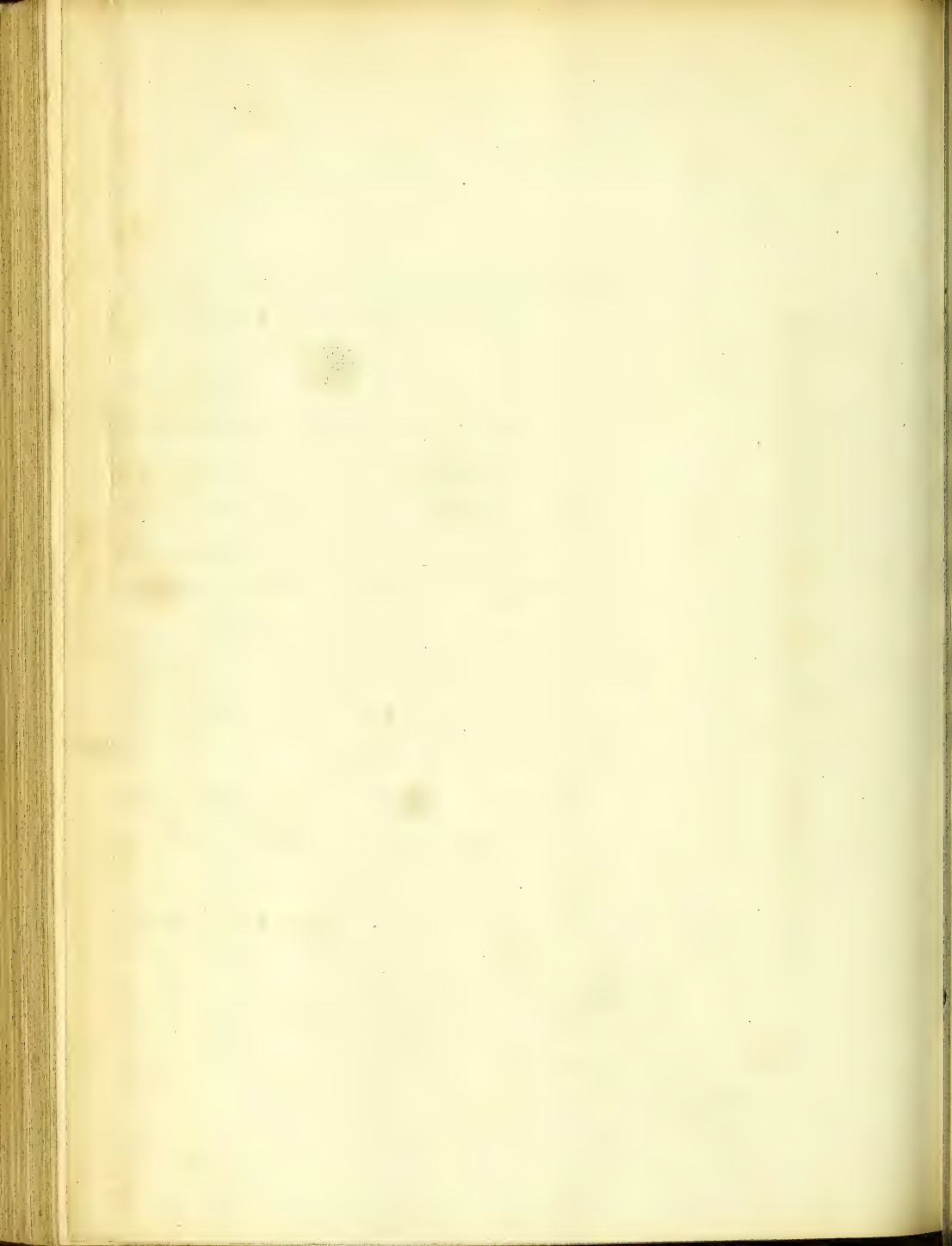
tenute

4321+ +234

Synopsis of all the Chords used in Thorough base.

A handwritten musical score for the song "The Rose Tree". The score is written on two staves. The top staff uses a soprano clef and the bottom staff uses an alto clef. The music is in 3/4 time, indicated by the "3" and "4" in the bottom right corner. The key signature has one flat (B-flat). The melody is written in the top staff, and the accompaniment is in the bottom staff. The lyrics "The Rose Tree" are written below the bottom staff. The score includes various musical notations such as notes, rests, and bar lines. There are some corrections and markings in the score, such as "6" and "4" written above notes in the top staff, and "3" and "4" written below notes in the bottom staff. The score ends with a double bar line and a repeat sign.





Air upon three Notes, sent to the Author of this Article by the late M. Rousseau in his own hand writing.

A. laticornis

Romance
Air de trois notes.



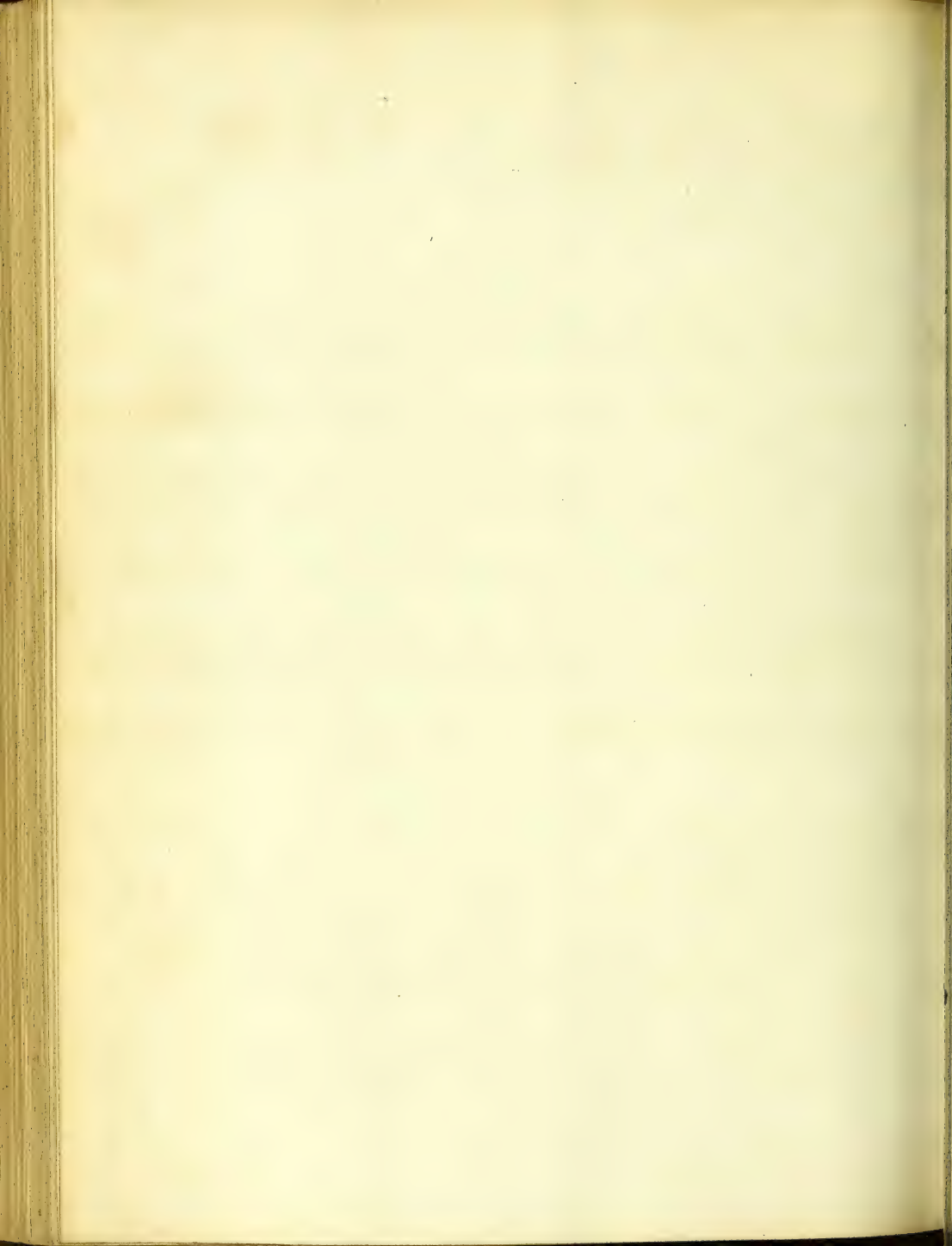
2.

3.

12. Si je passe
 sans te voir
 hehe, ta trace
 son desespoir :
 idie l'ai perdue
 ste à pleurer :
 ape eperdue
 rée d'expirer.

Le cœur me palpite.
Quand j'entens ta voix :
Tout mon sang s'agite
Dès que je le vois.
Ouvres-tu la bouche
Des Cicups vont s'ouvrir ;
Si ta main me touche,
Je me sens frémir.



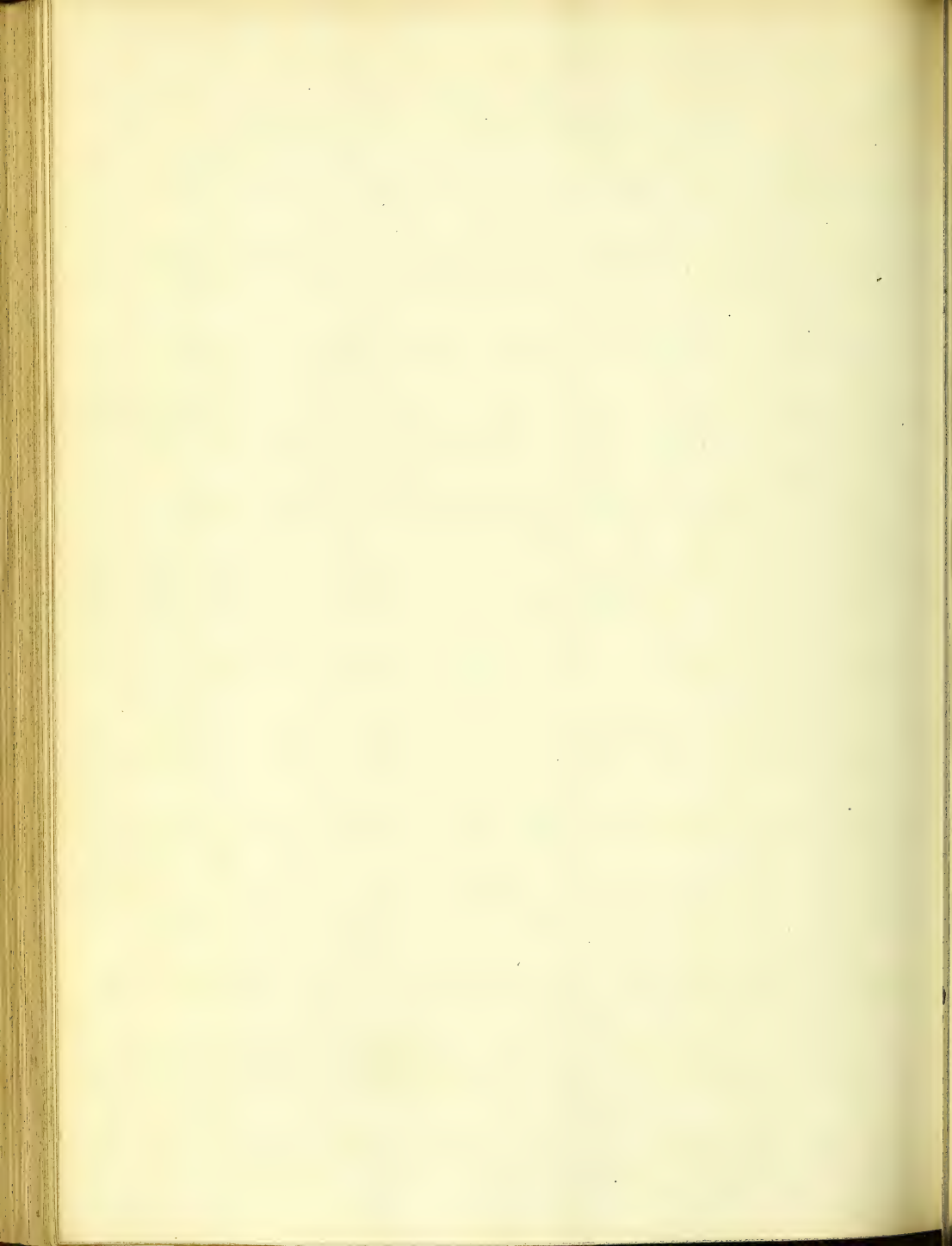


Original Melodies to the Hymn of Ossian in Temora.

Plaintive.

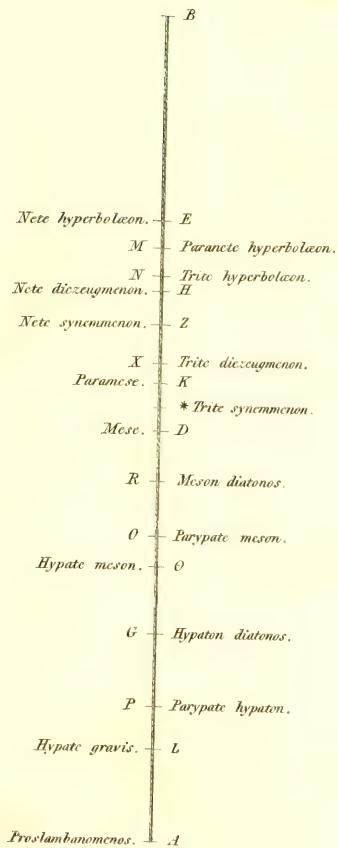
The musical score is written on ten staves. The first staff begins with a treble clef, a key signature of one sharp (F#), and a 3/4 time signature. The melody is characterized by a plaintive, slow tempo. The lyrics are written below the staves, with some words in italics. The score includes various musical notations such as notes, rests, bar lines, and repeat signs. The lyrics are as follows:

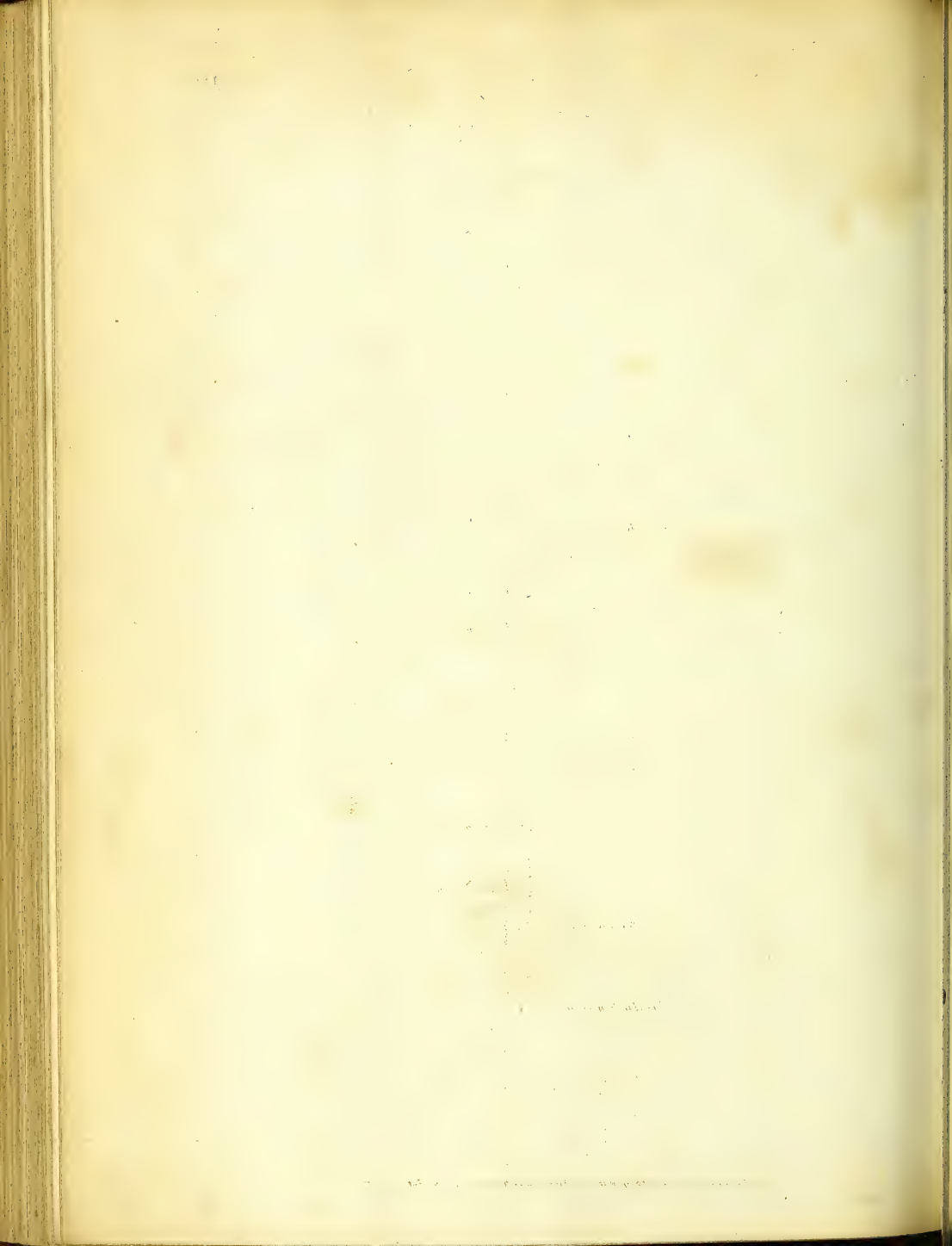
Sad and slow retired Sul--malla to Lona of the Streams, she went and *ten* turned: her
 blue eyes rolled in tears. But when she came to the rock, that darkly covered
 Lona's vale, she looked from her bursting soul on the King, and sunk at once be--hind.
 Son of Alpin: strike the string. Is there ought of joy in the harp?
 pour it then on the soul of Ossian: it is folded in Mist I hear thee O bard, in my
 Night. But cease the light--ly trem--bling sound, the joy of grief be--longs to
 Ision, amidst his dark brown years. Given thorn of the hill of ghosts, that shaketh thy
 head to night ly winds! I hear no sound in thee: is there no spirits windy skirt now
 rustling in thy leaves? often are the steps of the dead in the dark eddying
 ists: when the moon a dull shield from the East, is rolled a long the sky.
 Ullin Carril, and Ryno, voices of the days of old! Let me
 or you while yet it is dark to please and a wake my soul I hear you
 not, ye sons of song, in what hall of the Clouds is your rest? do you touch the shadowy
 harp rebled with morning mist where the rustling sun comes forth from his green-head ed waves.



EVCLIDIS SECTIO CANONIS.

See the Article Euclid.





Canon Canonicus

Soprano
Glori a in ex cel sis Deo et in terra pa x.

Alto
Glori a in ex cel sis Deo et in terra pa x.

Bass
Glori a in ex cel sis Deo et in terra pa x.

Canon Canonicus; in which the base begins at the end, and moves backwards like a Crab.

Ritornelle

Soprano
Ritornelle

Alto
Ritornelle

Bass
Ritornelle

Ritornelle

Soprano
Ritornelle

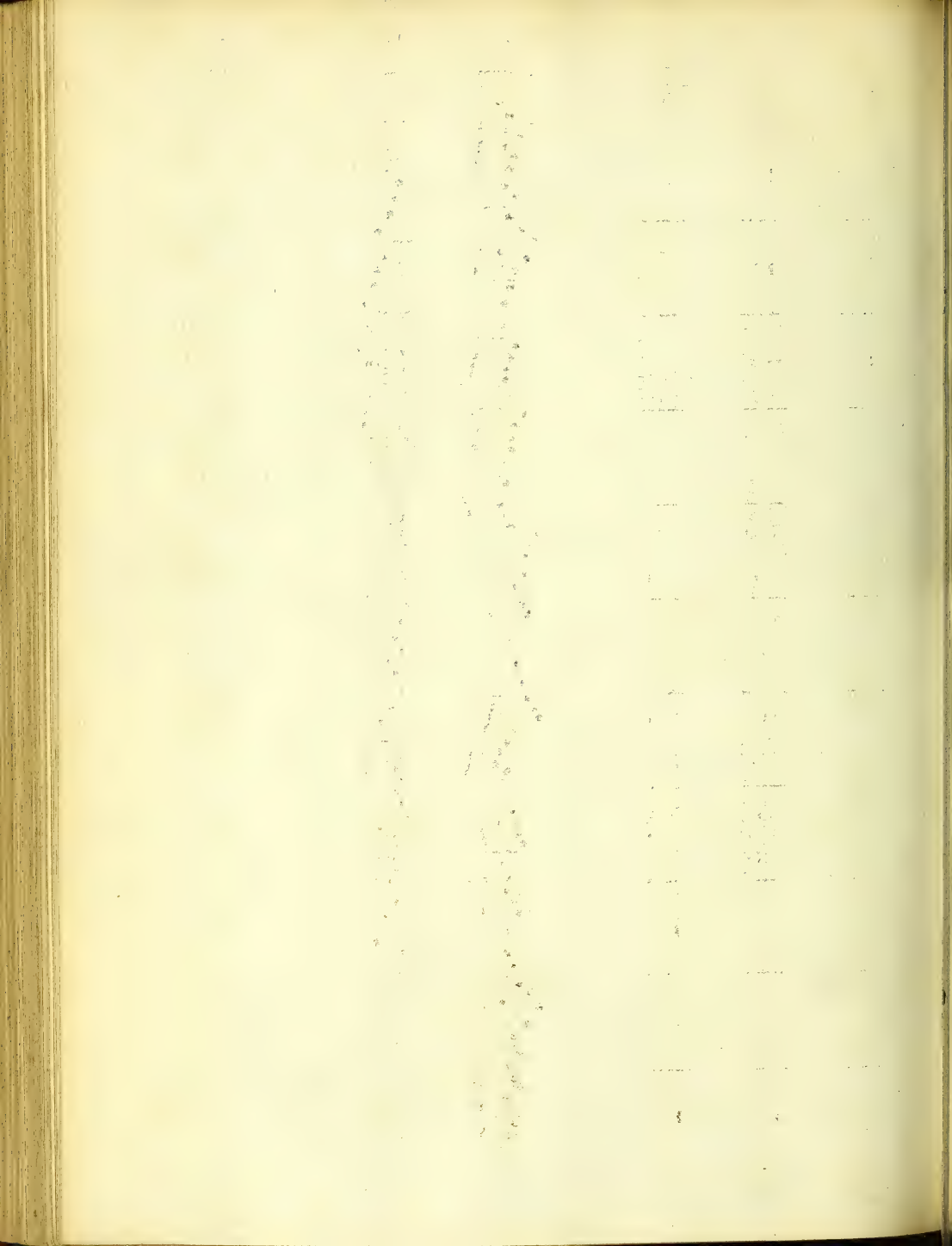
Alto
Ritornelle

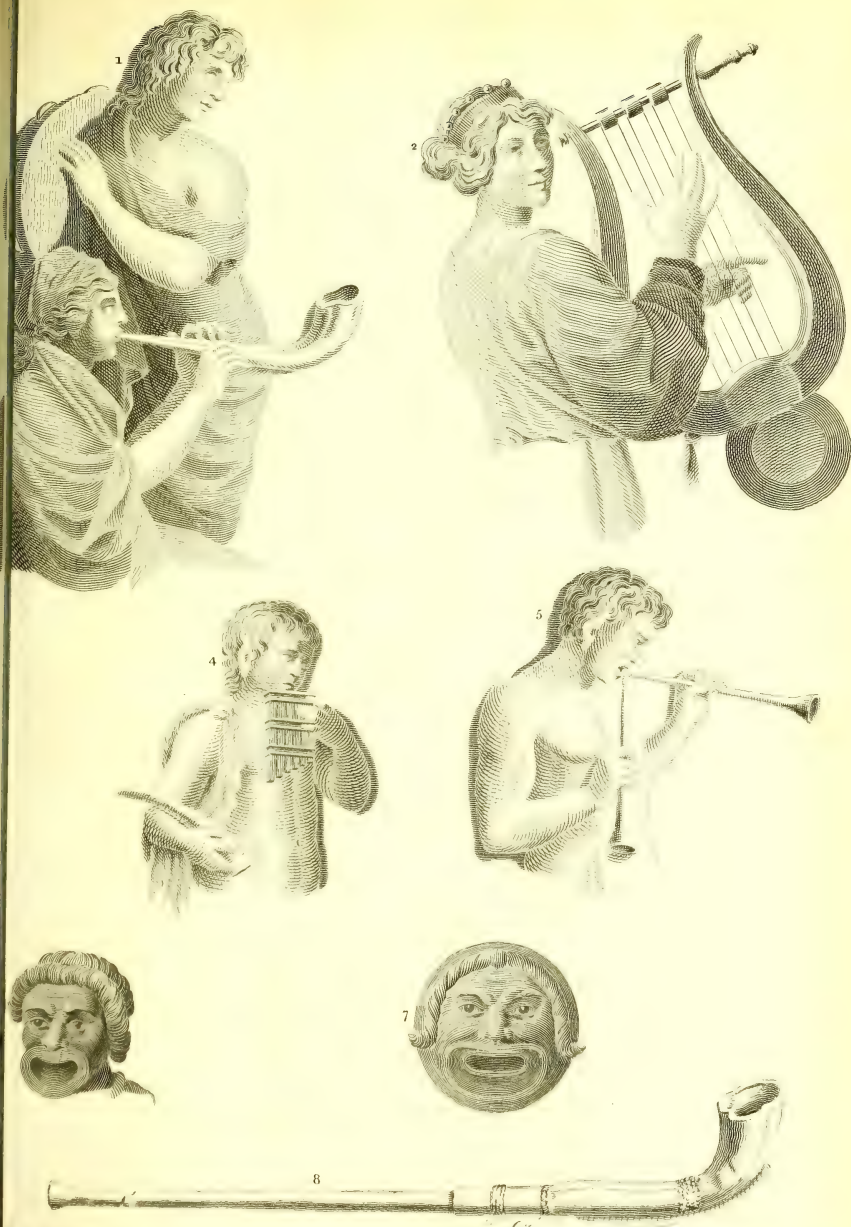
Bass
Ritornelle

The complete set of Keys on the *Piano Forte* in present use with additional keys at the bottom as well as the top. *N.B.* No Clefs are used in this complete. *C. IMMUT* or scale of appreciable sounds, except the base and treble, which are removable to different lines. But on whatever line the base Clef is placed, it makes that line F.

C. IMMUT
in Alto, b c

1st Octave
2^d Octave
3^d Octave
4th Octave
5th Octave
6th Octave





1. A Tumbrel, or Tambour de Basque.

2. A Citharistria, or female minstrel.

3. A double Lituus.

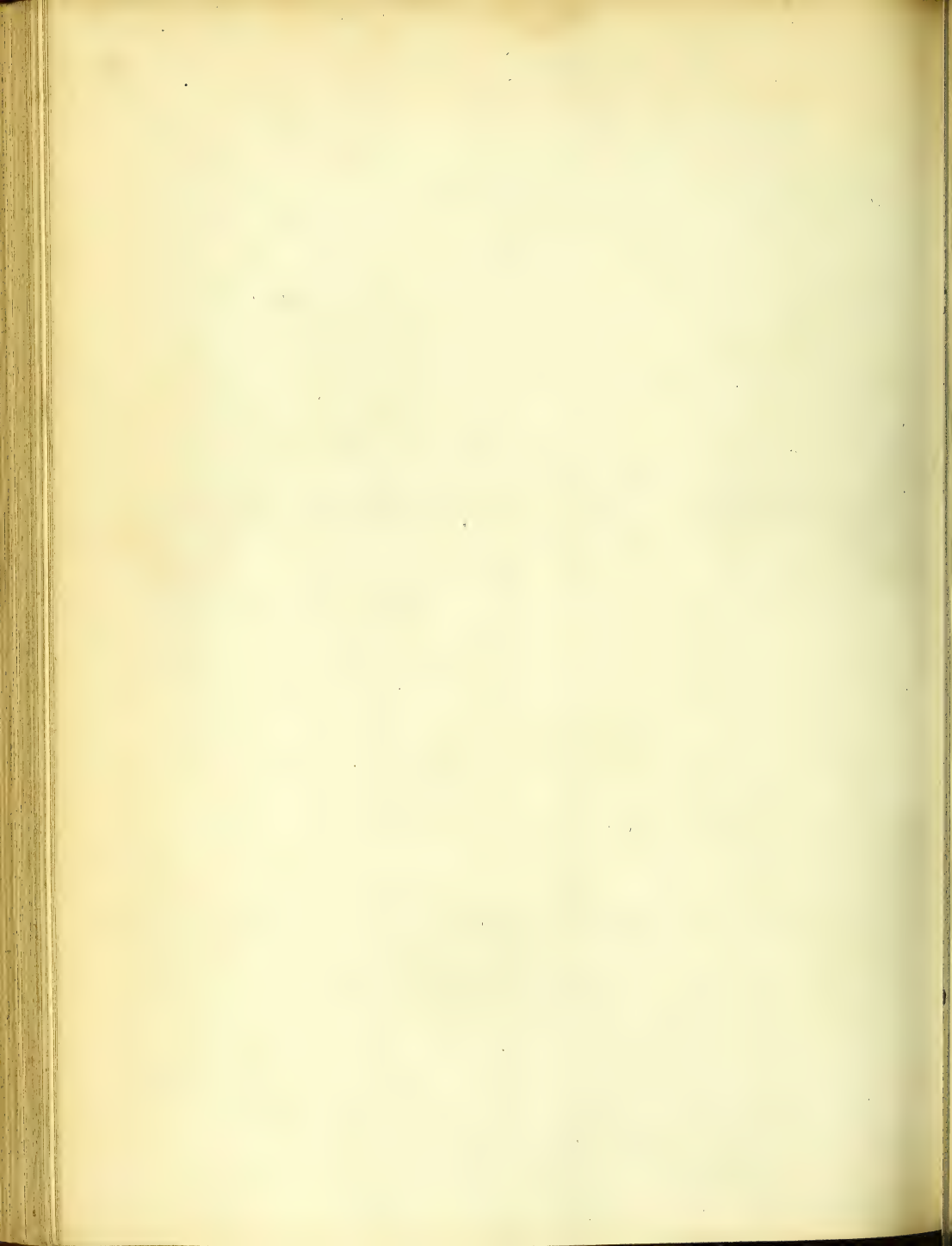
4. Pan playing on the Syrinx.

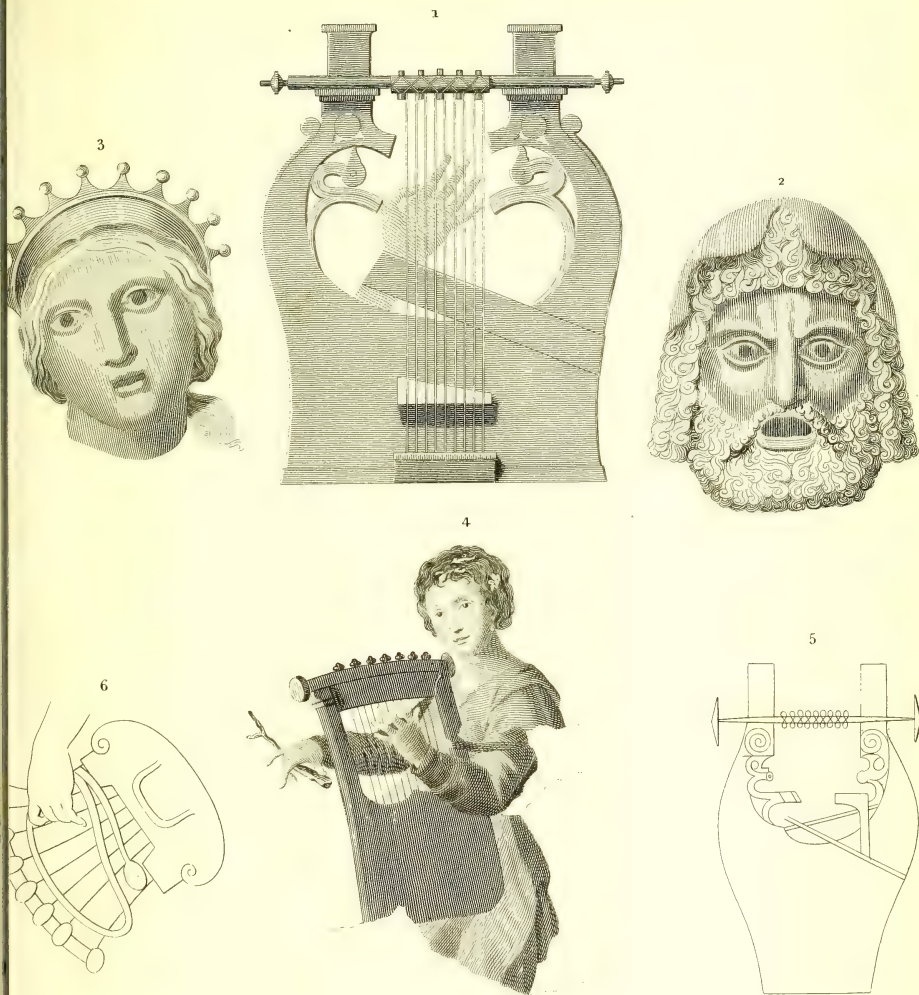
5. A Bacchanal playing on two Flutes of the same pitch: *Tibia pures*.

6. Antique Theatrical Masque.

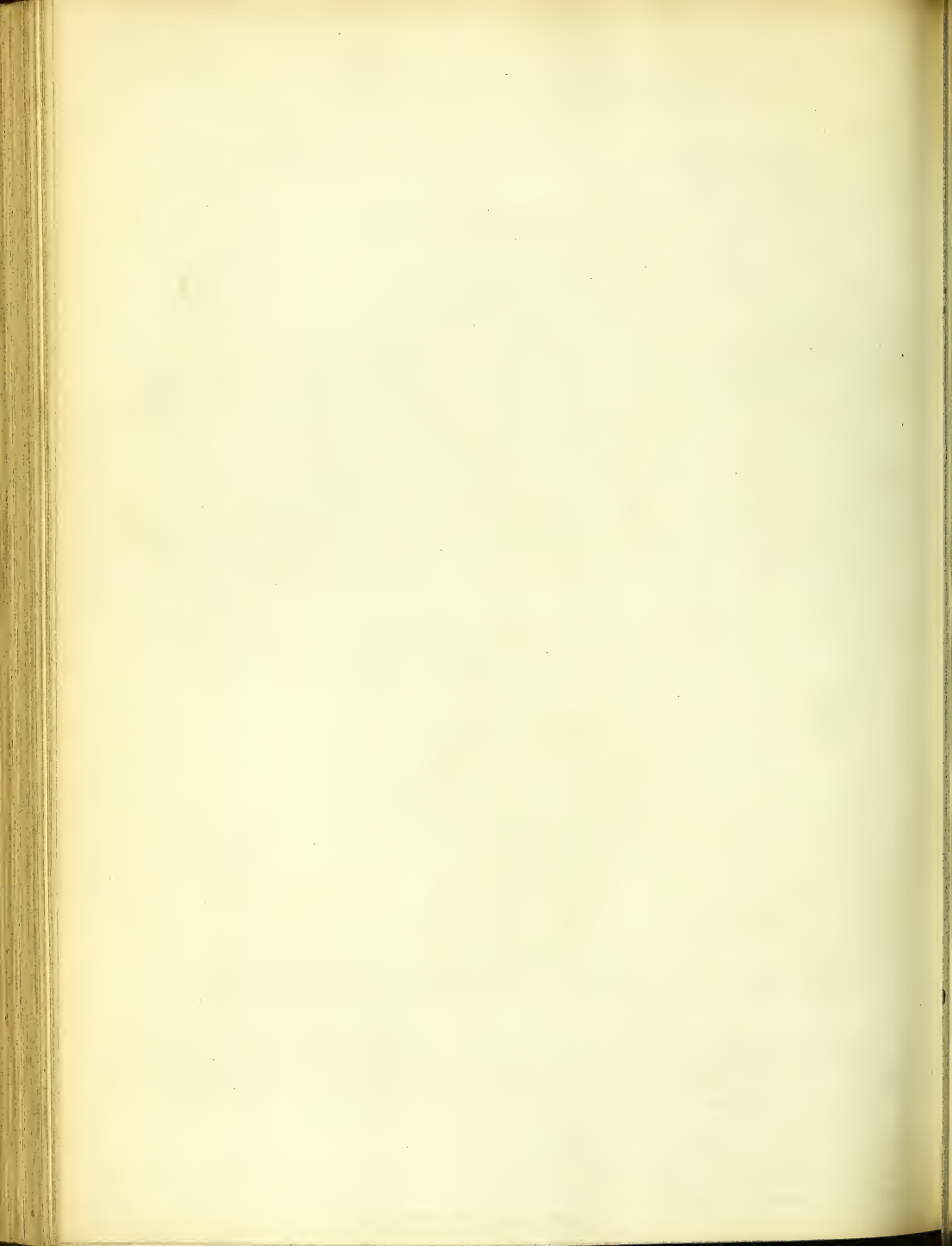
7. A genuine ancient metalline Lituus.

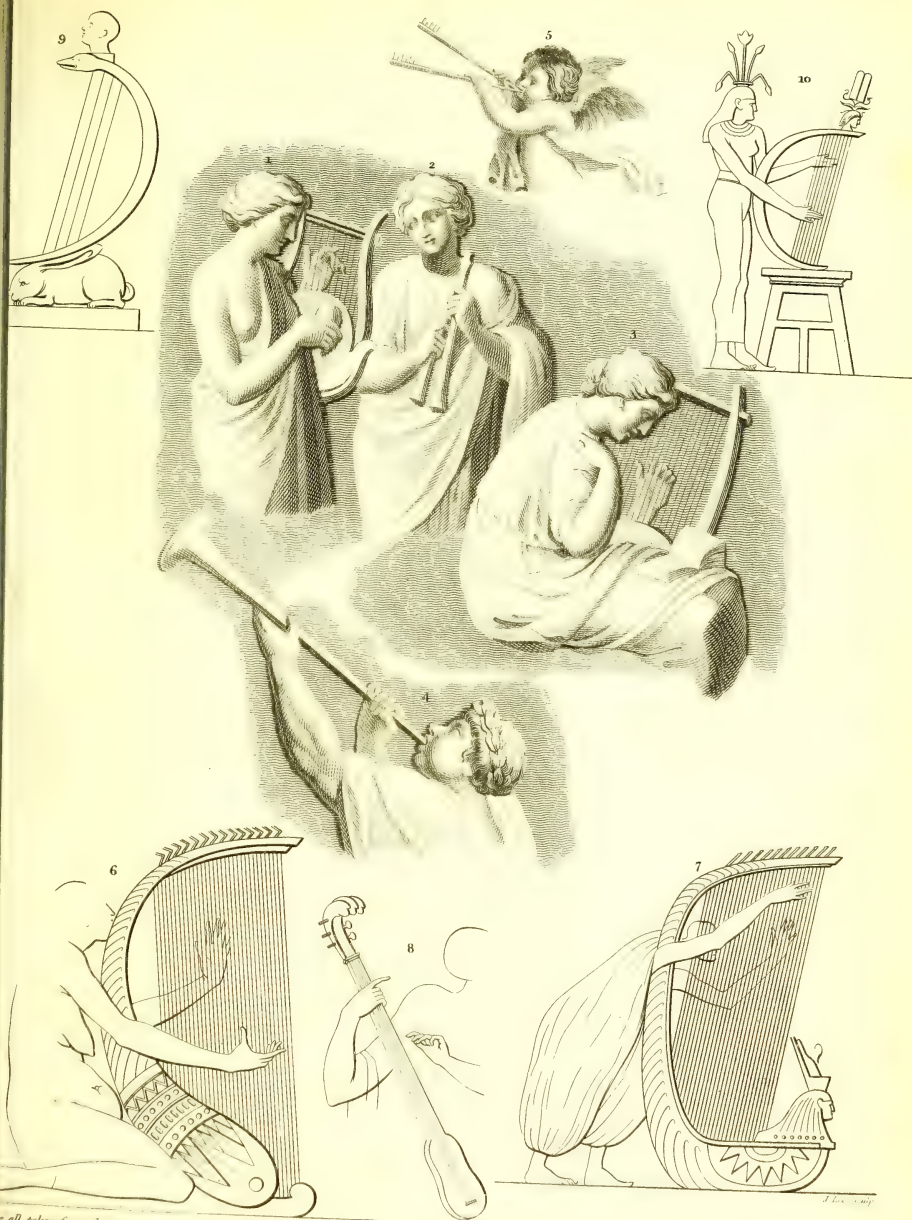
8. A genuine ancient metalline Lituus.





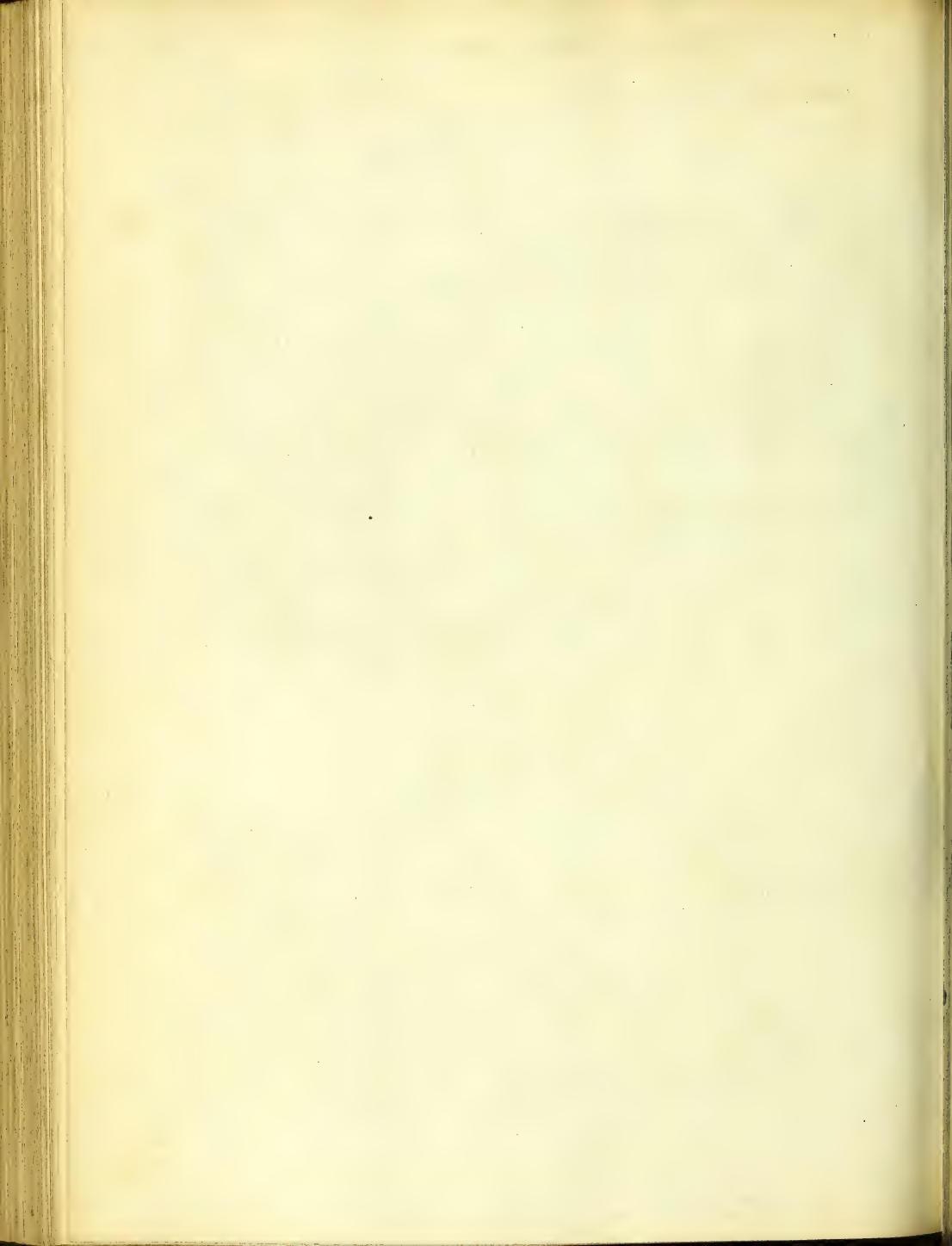
1. Beautiful Greek Barbiton, or Harp, from a bas-relief, a Cast of which is in the Royal Academy; An Antique Marble in the British Museum has a similar Barbiton, the Greek Vases &c. furnish similar examples.
2. Mask of the Hercules furcus of Euripides from a Marble in the Palace Albani in Rome.
3. Mask of Thais from Terence's play of the Eunuchs in the Illuminated Vatican M.S. of his Comedies.
4. Figure is in the 42nd Plate of the 4th Vol. of the Herculanum Paintings.
5. Vases from St. W^m Hamilton's last Collection of Vases.

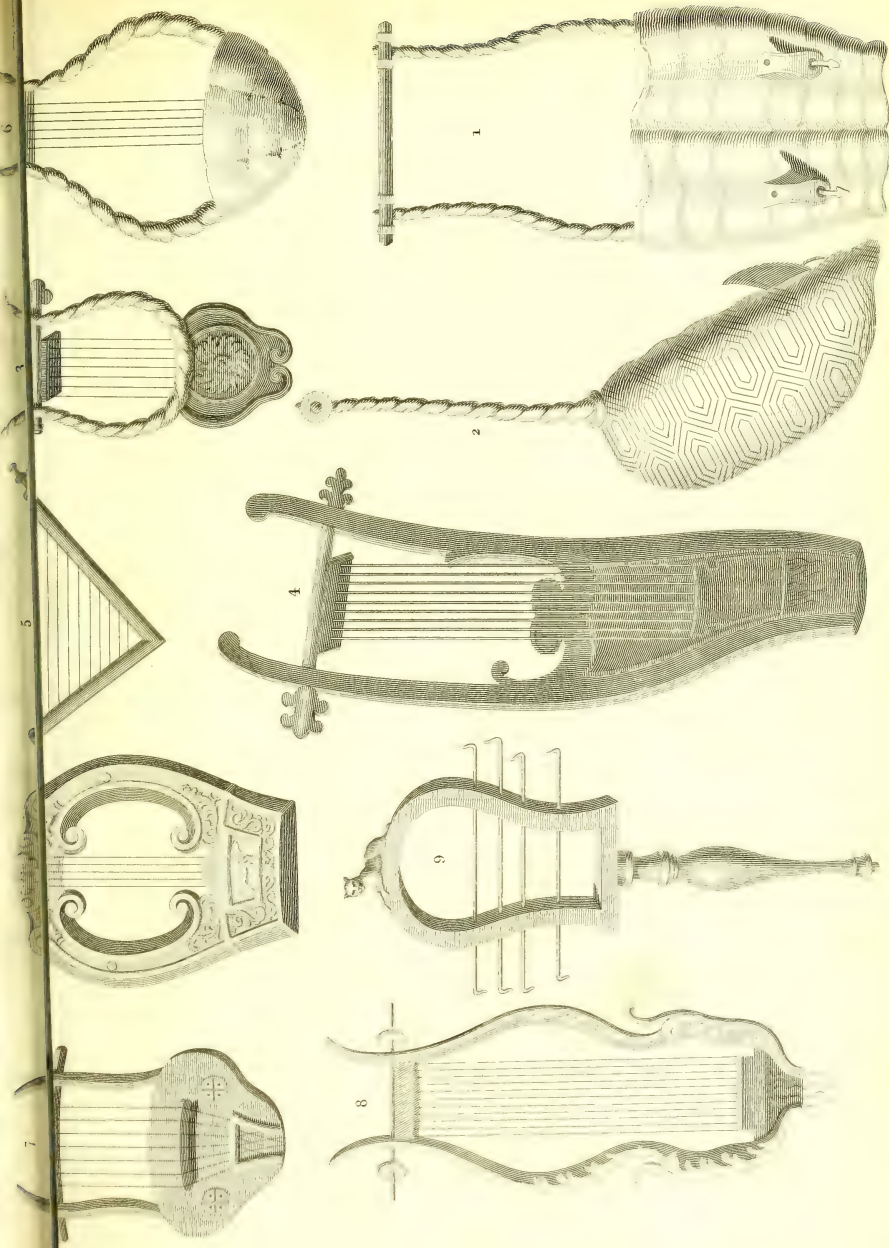




All taken from the same piece of Ancient sculpture, in the Ghigi Palace at Rome, representing a Group of Musicians performing an Epithalamium.
 The long Trumpet, called by the Hebrews, the Trumpet of the Jubilee, to be seen on the Arch of Titus, and on Trajan's Pillar.
 Playing on a double Flute or Tibia paves, from an Ancient painting in the Museo at Portico.

No. From Egyptian paintings in the Tombs of the Kings of Thebes &c. — Denon Pl. 35 — Nos. 26, 27, 29, 30 & 31.
 Published as the Act directs May 1.2804. by Longman & Rees, Paternoster Row.





1 & 2. The *Tektado* or Lyre of Amphion, in front & profile as it appears on the base of the *Tro Farnese*, at Rome.

3. The Lyre held by Terpsichore in the Picture of that Muse dug out of Herakleum.

4. The *Psallery* as delineated in the Picture of the Muse Erato dug out of Herakleum.

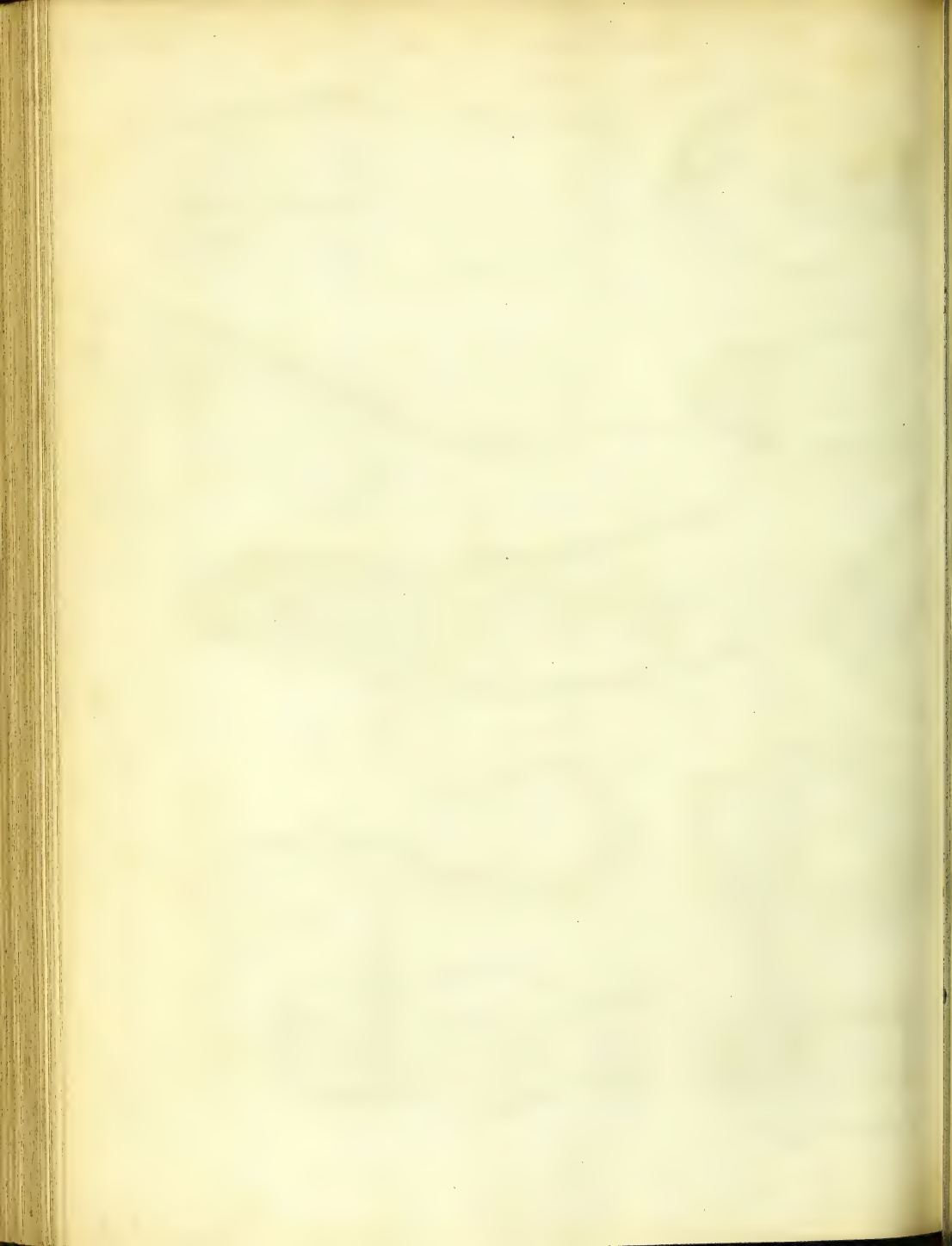
5. A *Trigonum* or Triangular Harp from an ancient Painting in the Museum of the King of Naples.

6. The *Abbyssinian Tektado* from a Drawing by Mr Bruce.

7. An *Etruscan Lyre* with 7 strings.

8. A Lyre in the ancient Picture dug out of Herakleum, on which *Orpheus* is described as using *Arctophila* to play.

9. An *Egyptian Synamis*, 10. An *Abbyssinian Lyre* richly ornamented.



INDIAN MUSICAL INSTRUMENTS.



Fig. 1.

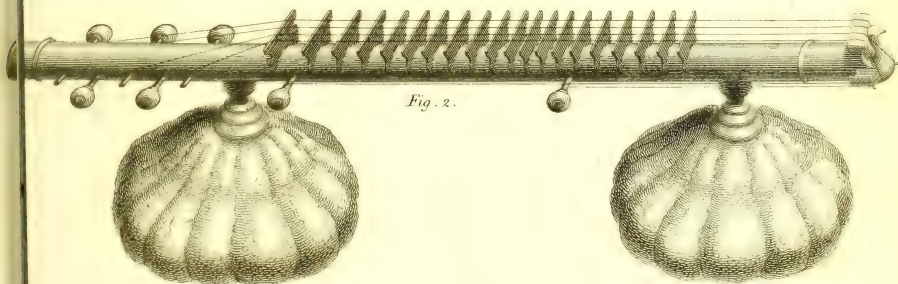
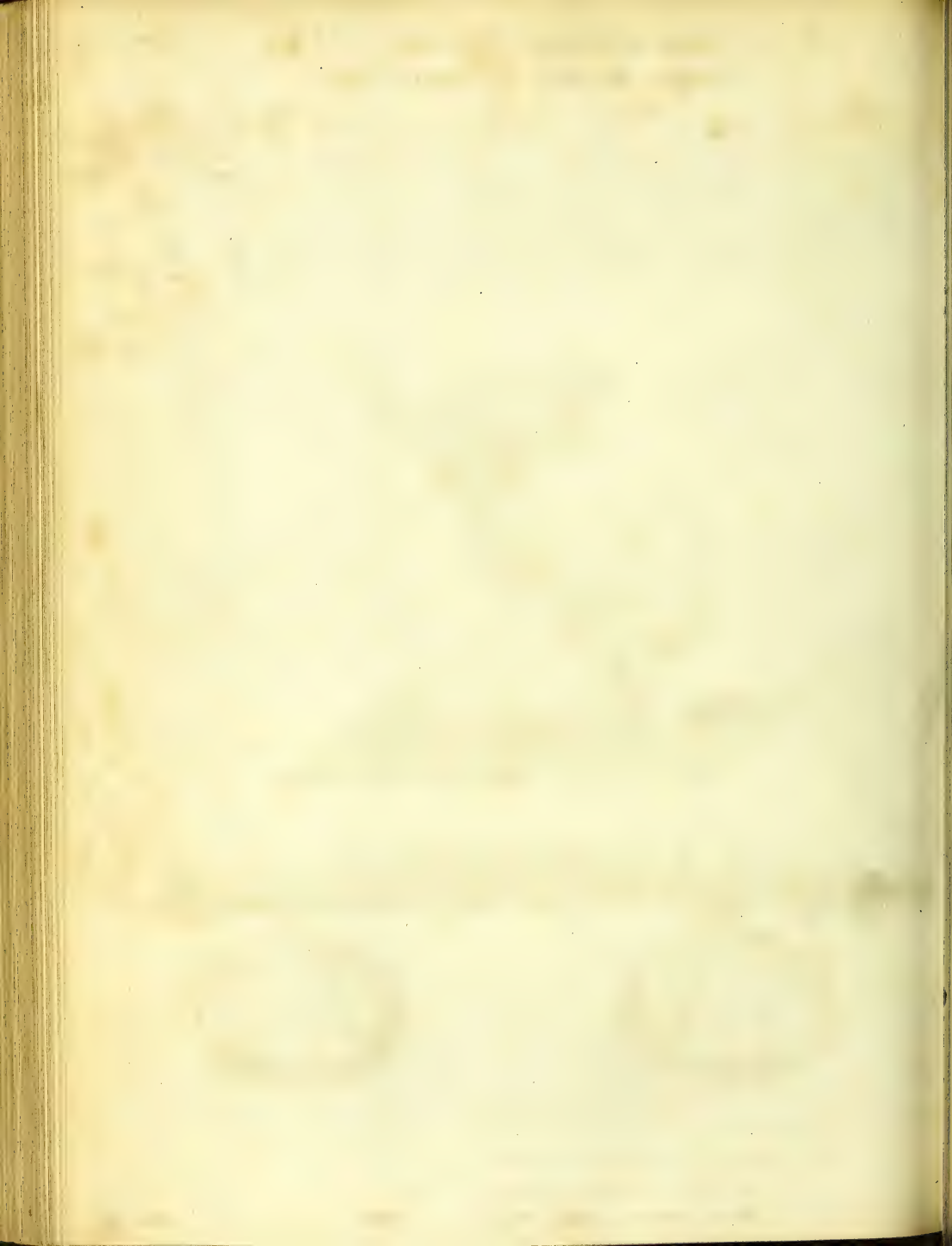
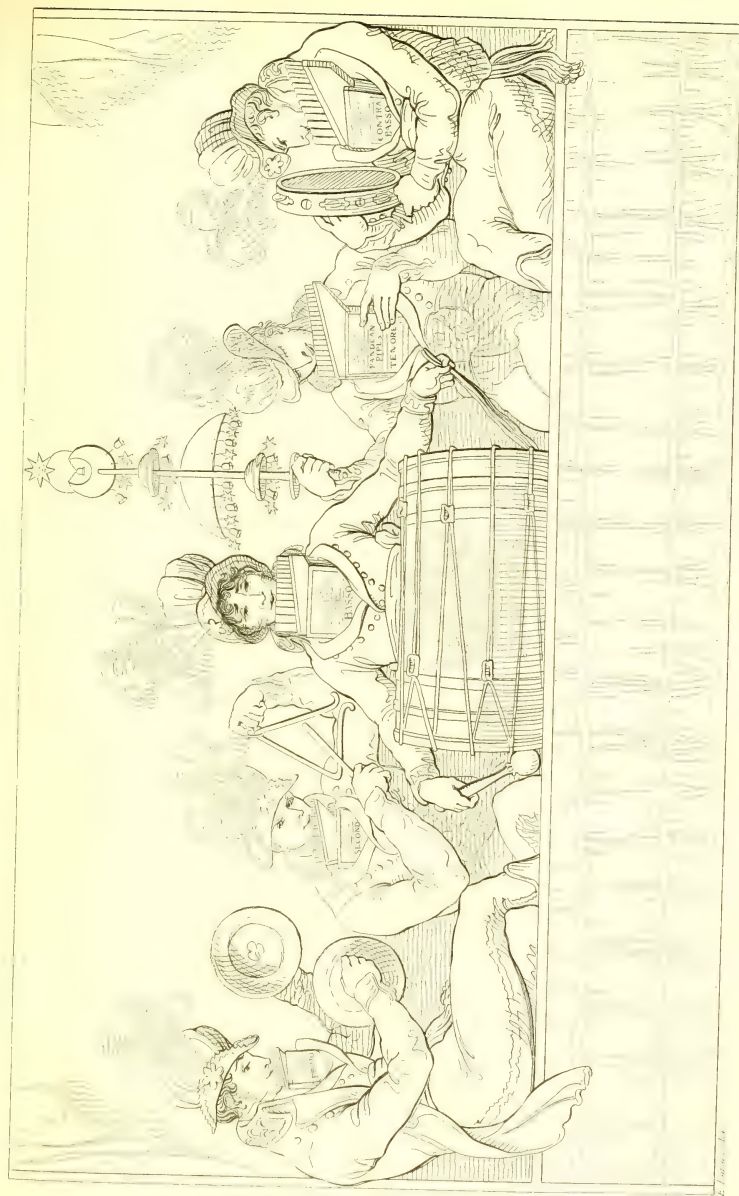


Fig. 2.

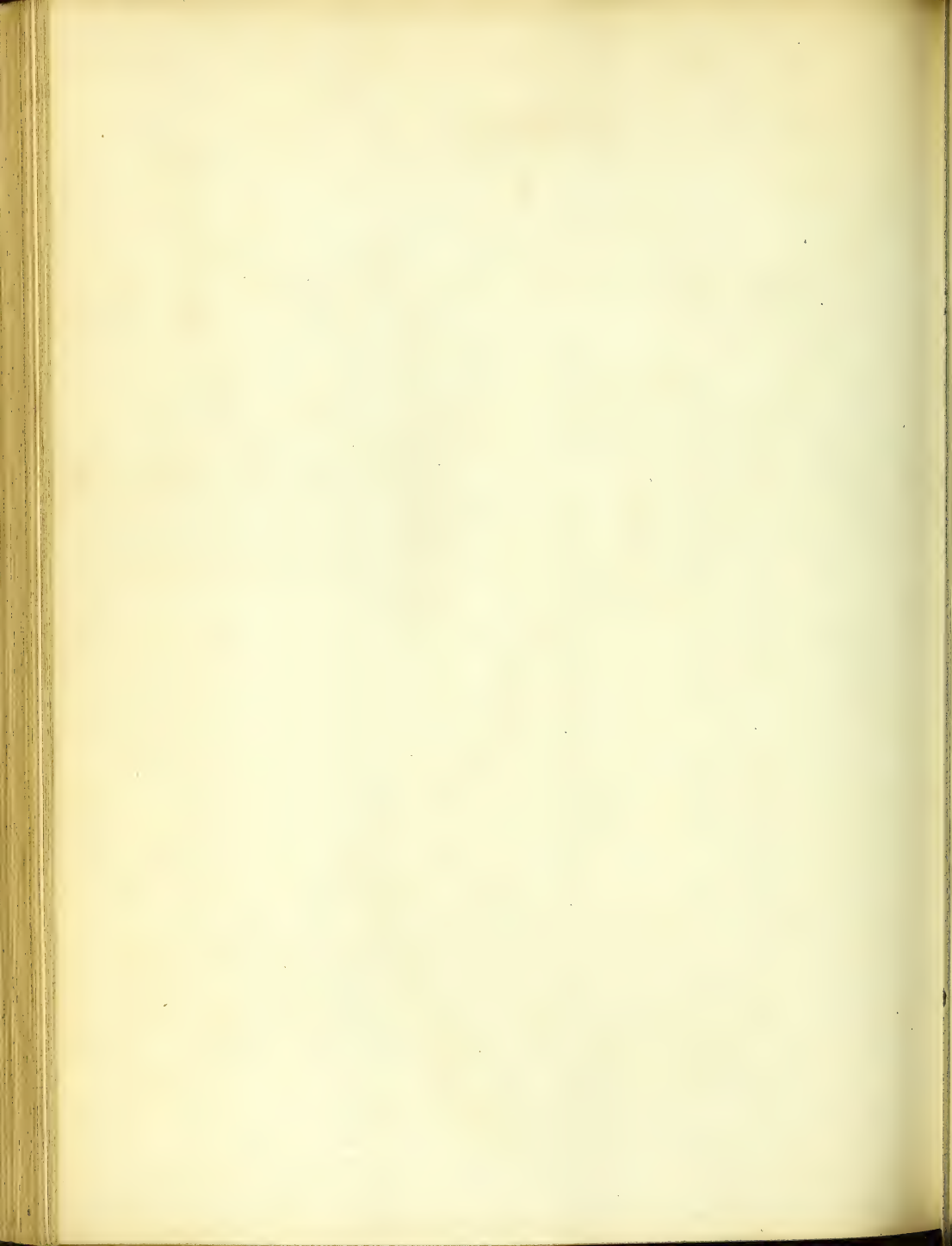
Fig. 1. From an original Indian Painting.

Fig. 2. The Been, an Indian Musical Instrument, as described by Sir William Jones, in a discourse on the subject, in the Asiatic Researches Vol. 1. P. 295.

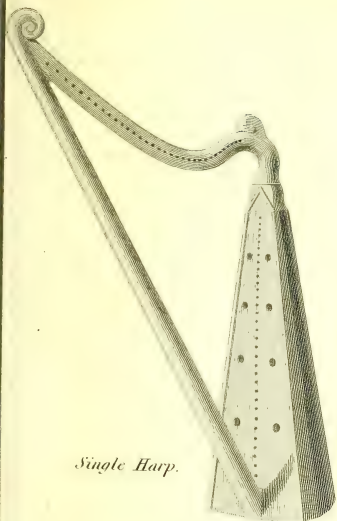




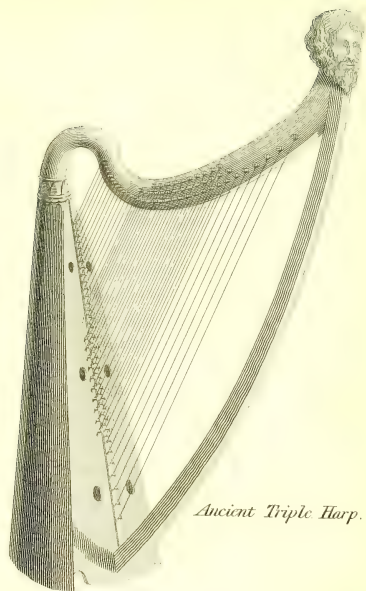
Published at the Art Library, Dec. 1, 1890, by Longman, Harri, Ross & Co., Paternoster Row.



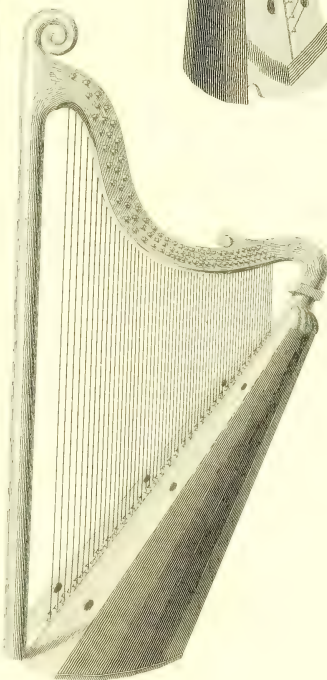
WELSH HARPS.



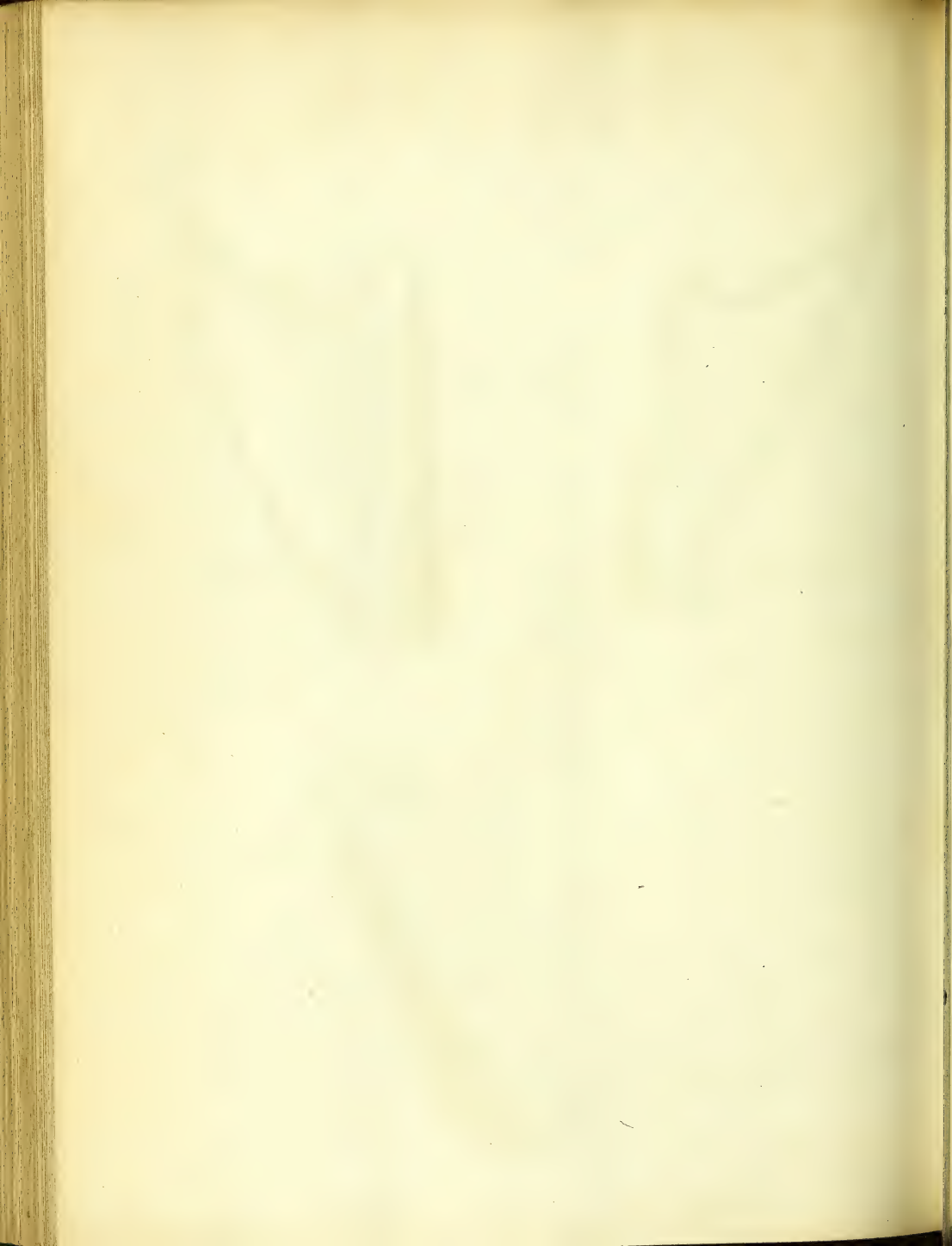
Single Harp.



Ancient Triple Harp.



Modern Triple Harp.



MUSICAL INSTRUMENTS.

PLATE VIII.

ORIGIN OF THE BOW.

Fig. 1



Fig. 2

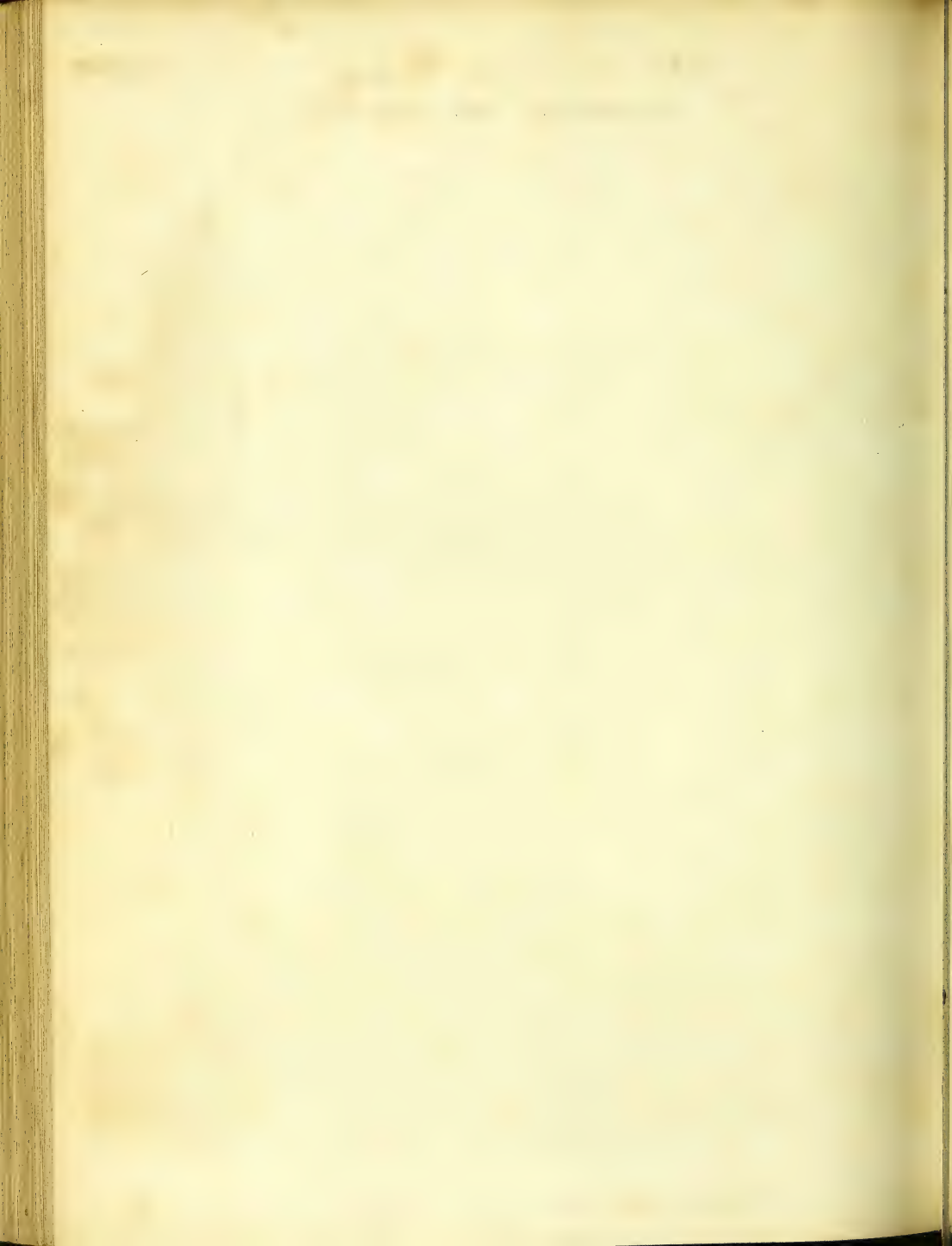


Fig. 3



Fig. 5

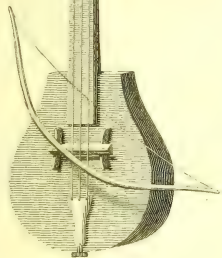




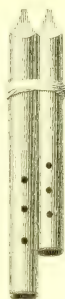
From the Russian Antiquities, by M. Guthrie, Physician to the late Empress Catherine.

Goudok.

Rebec with three Strings.

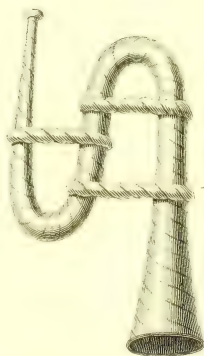


Gélaïka.



Double Flutes of the Ancients.

Corne de chasse de Sibérie, ou Rok.



Hunting Horn of Siberia.

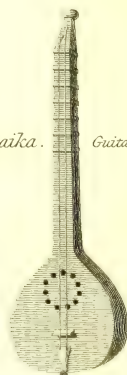


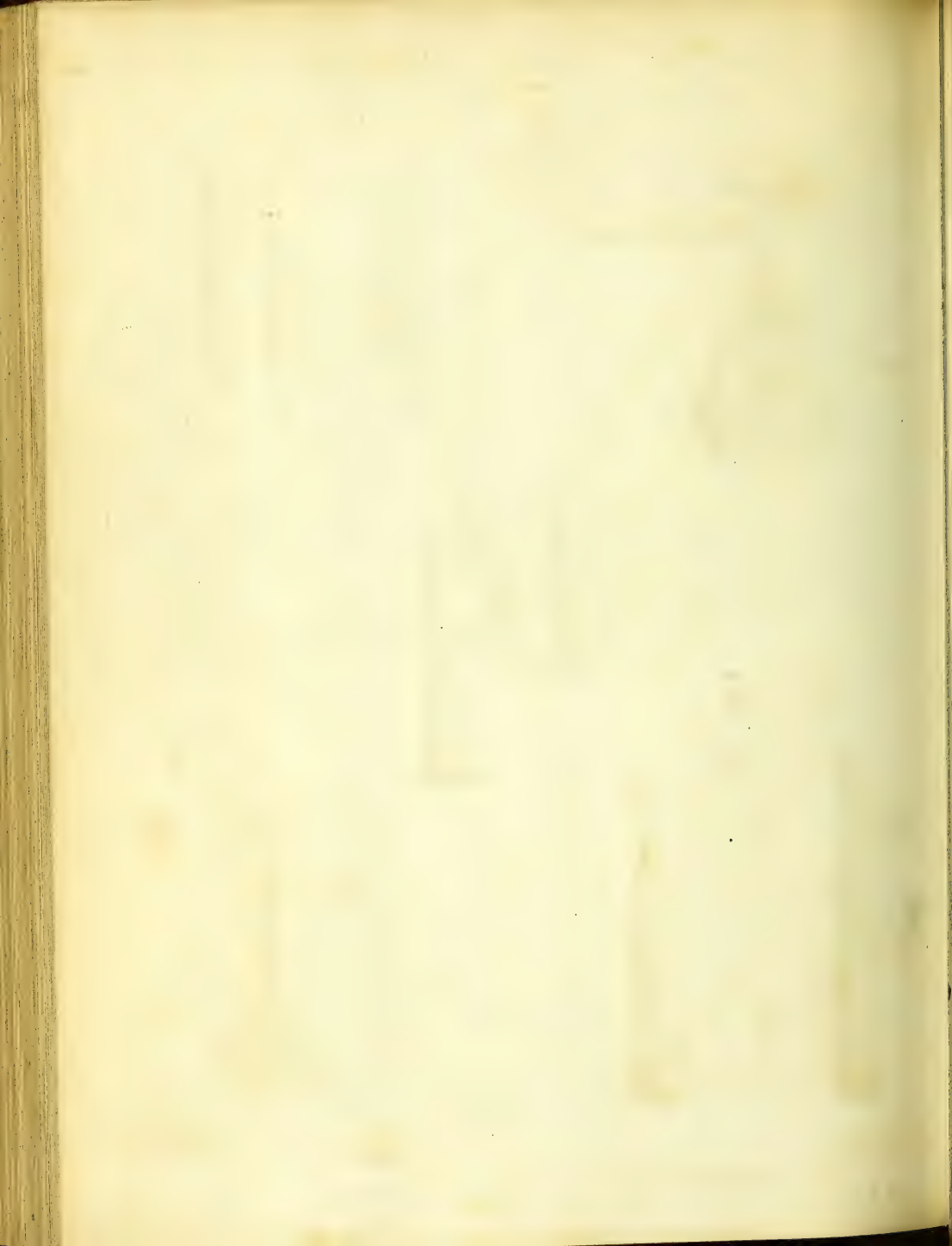
Rejok.



Batalaïka.

Guitar with two Strings.





HARPS.

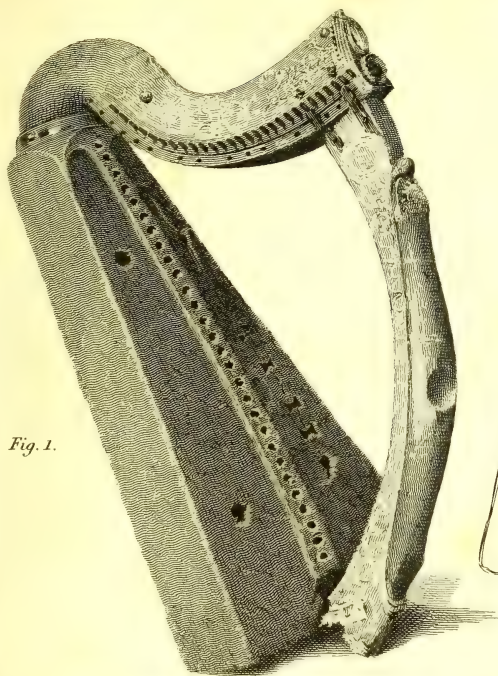


Fig. 1.

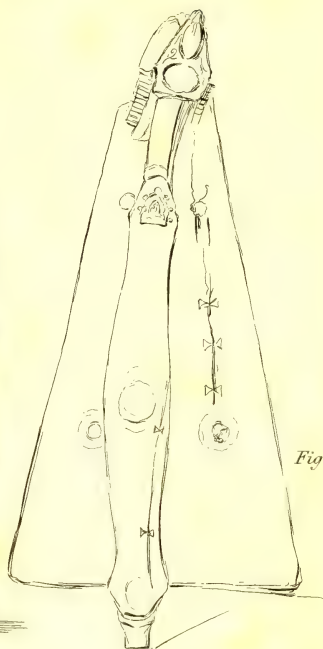


Fig. 2.

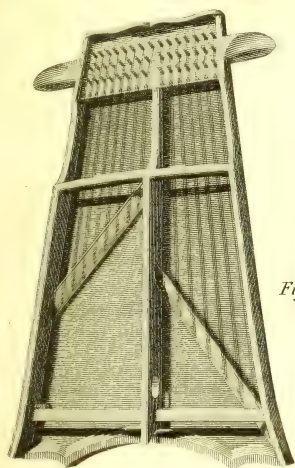


Fig. 4.

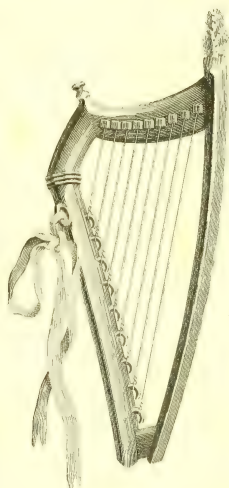
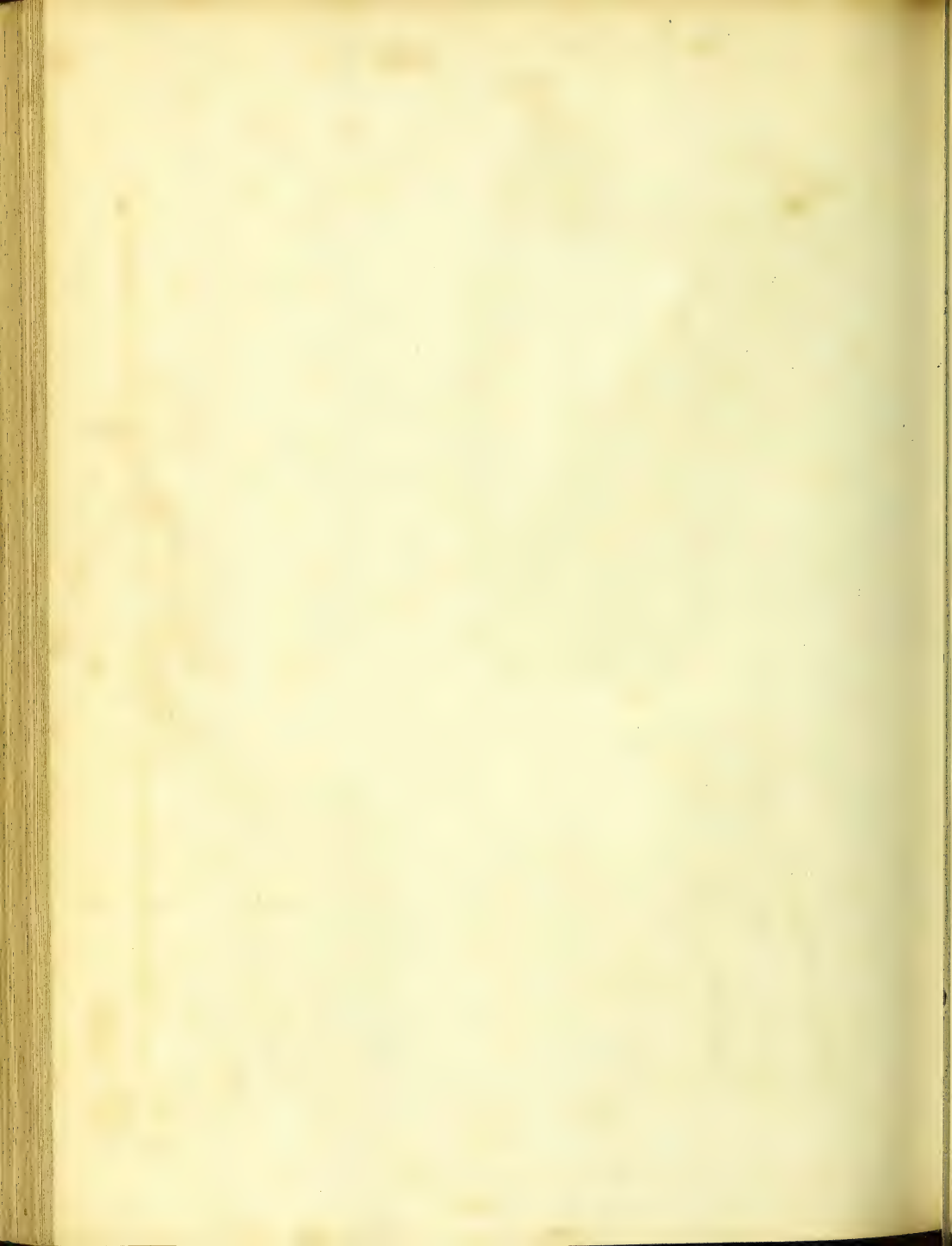


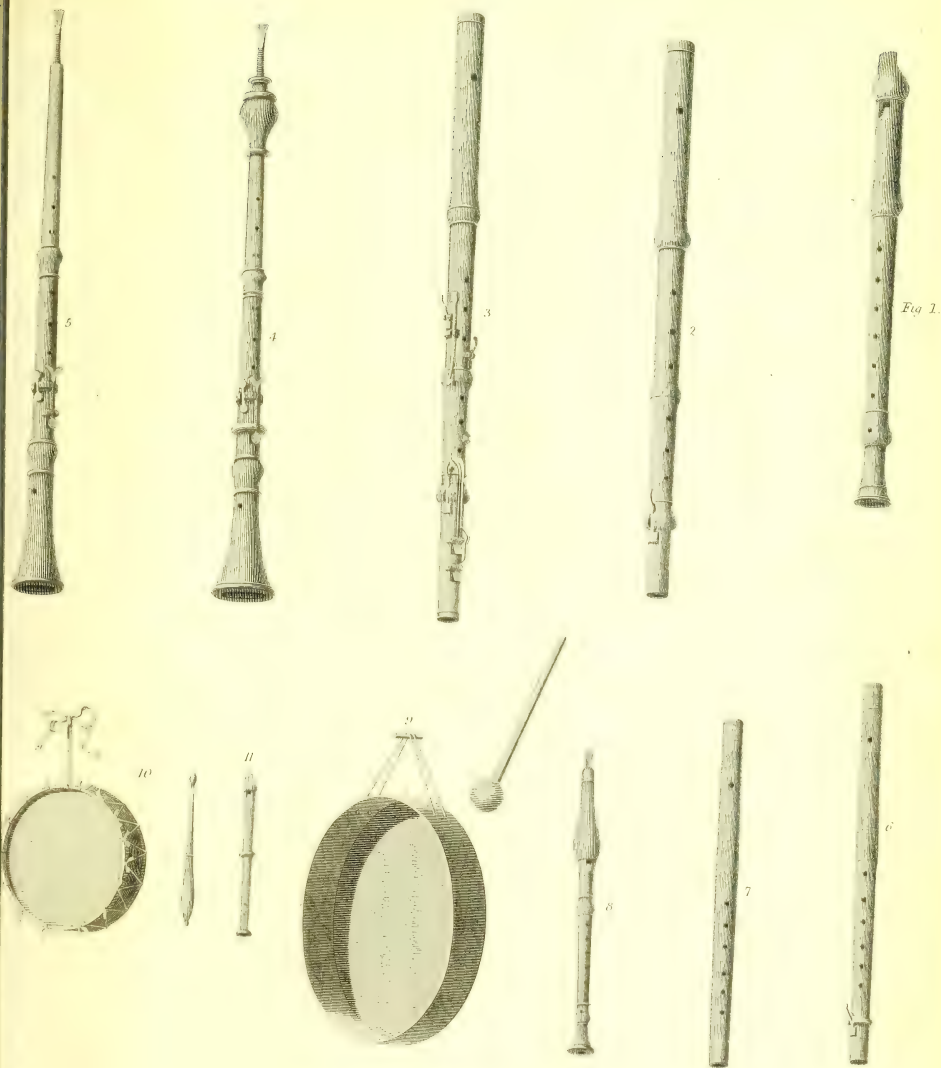
Fig. 3.

Fig. 1 & 2. The Harp of Brian Boromh, height 32 In. In the University of Dublin.

Fig. 3. Silver Prize Harp, height 6½ In. In the possession of Dr. Burney.

Fig. 4. Bell Harp, height 21 In. In the possession of Mr. Jones.





1. English Common Flute

2. German Flute

3. Improved German Flute with additional Keys

4 & 5. Hautbois

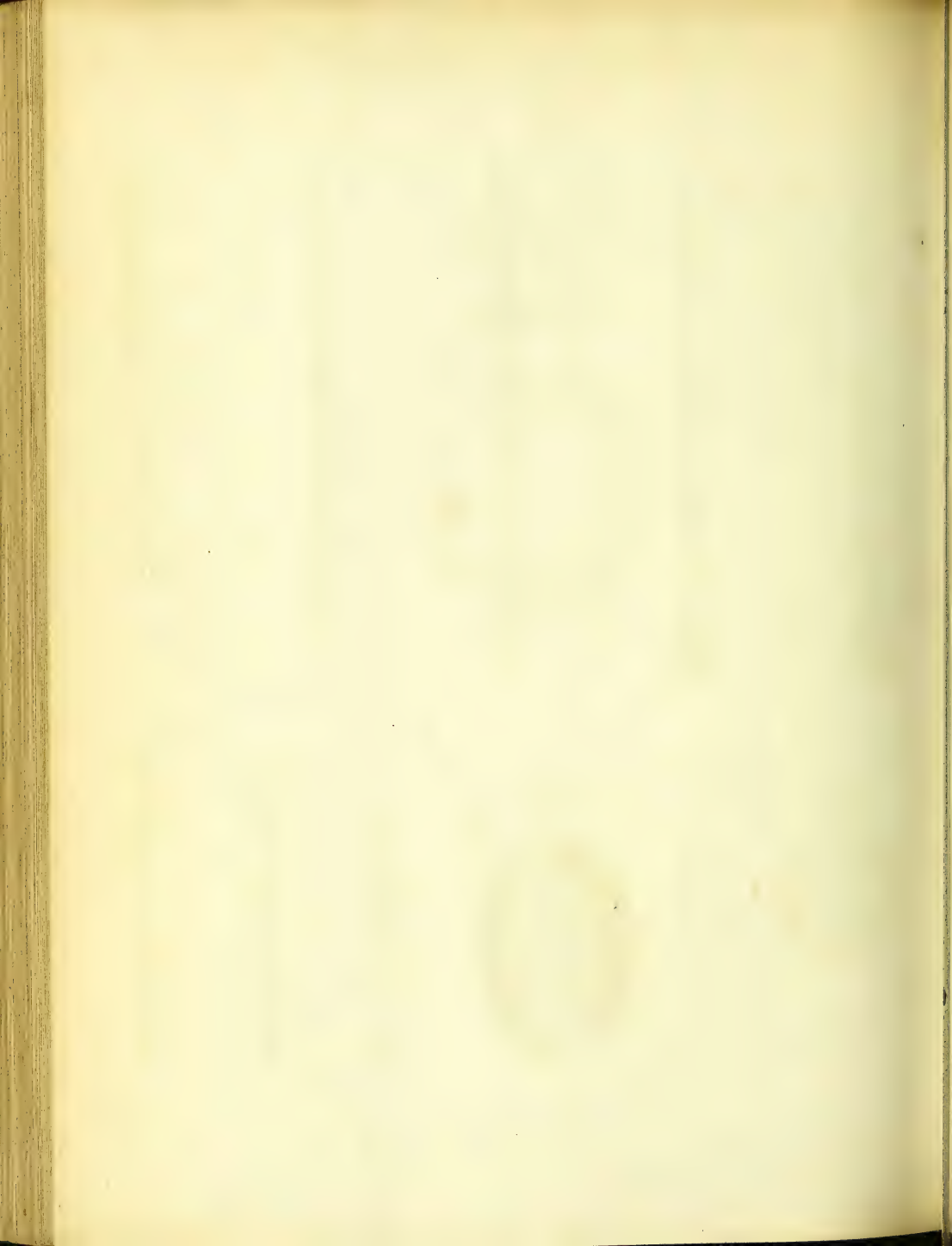
6. B Flûte

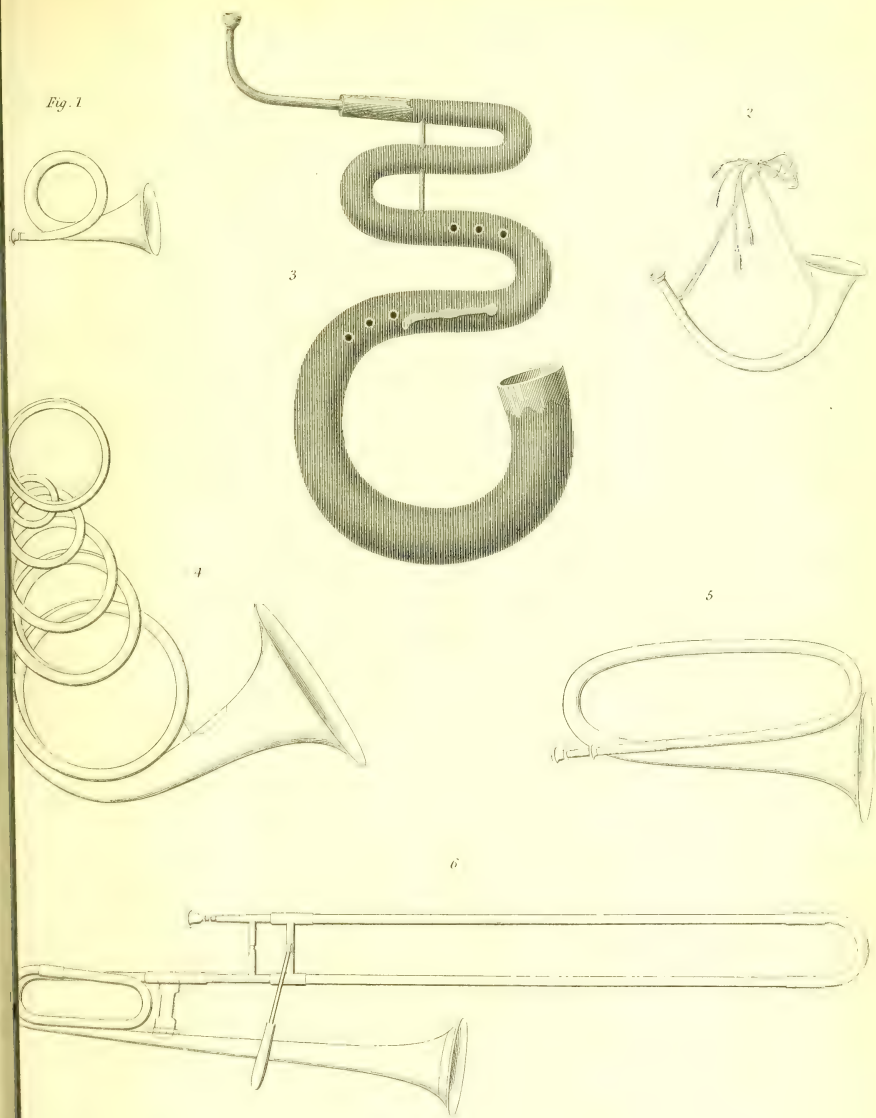
7. C Flûte

8. English Flageolet

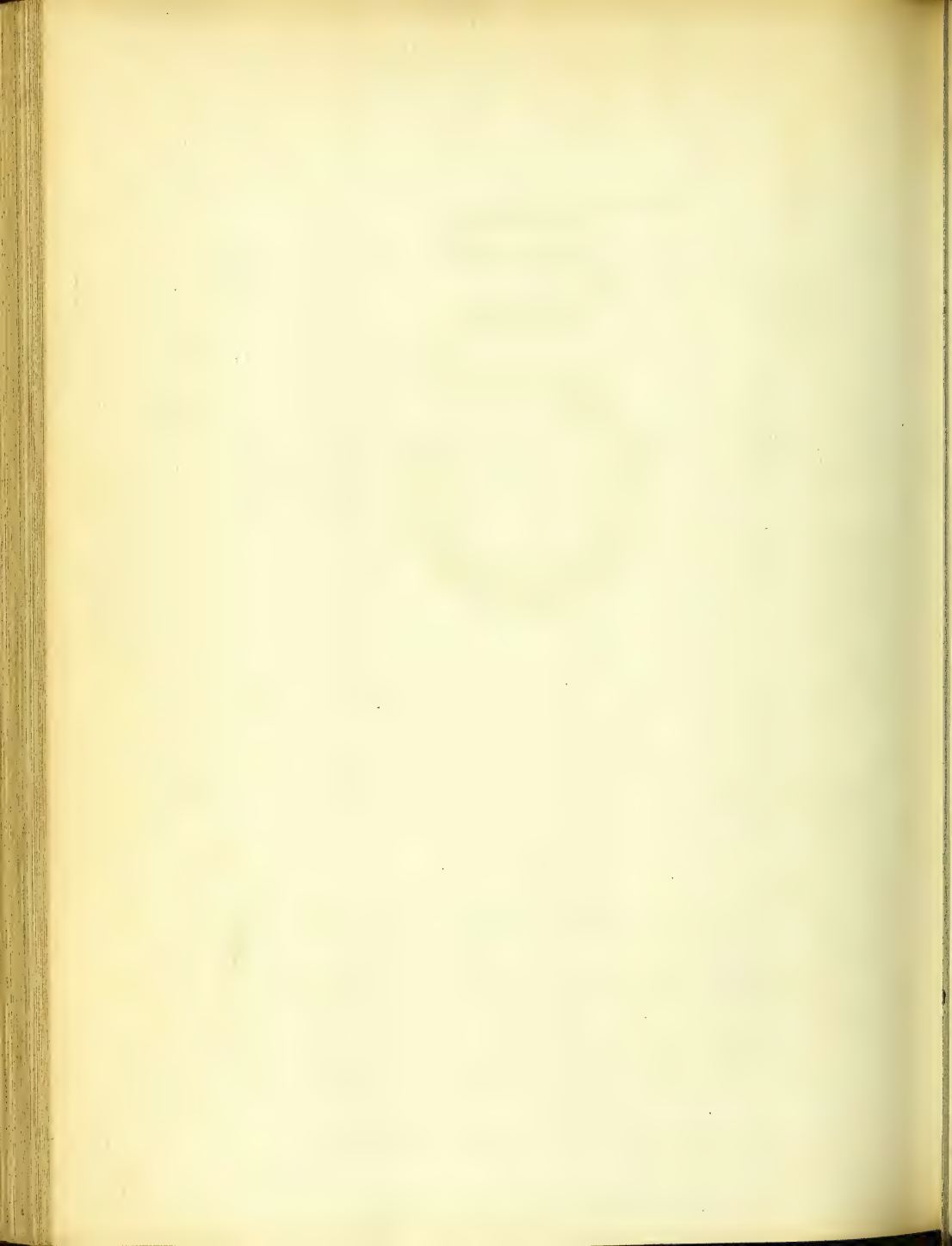
9. Gigue

10 & 11. Tabour & Pipe





Fig' 1 & 2 Hunting Horns 3 Serpent 4 French Horn 5 Bugle 6 Nacbut or Trombone.



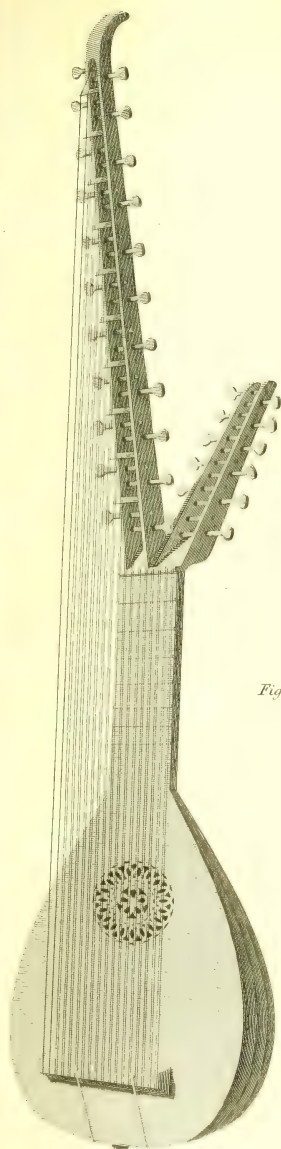


Fig. 1



Fig. 2

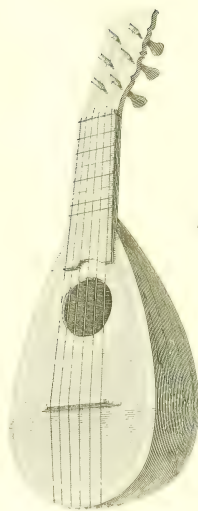
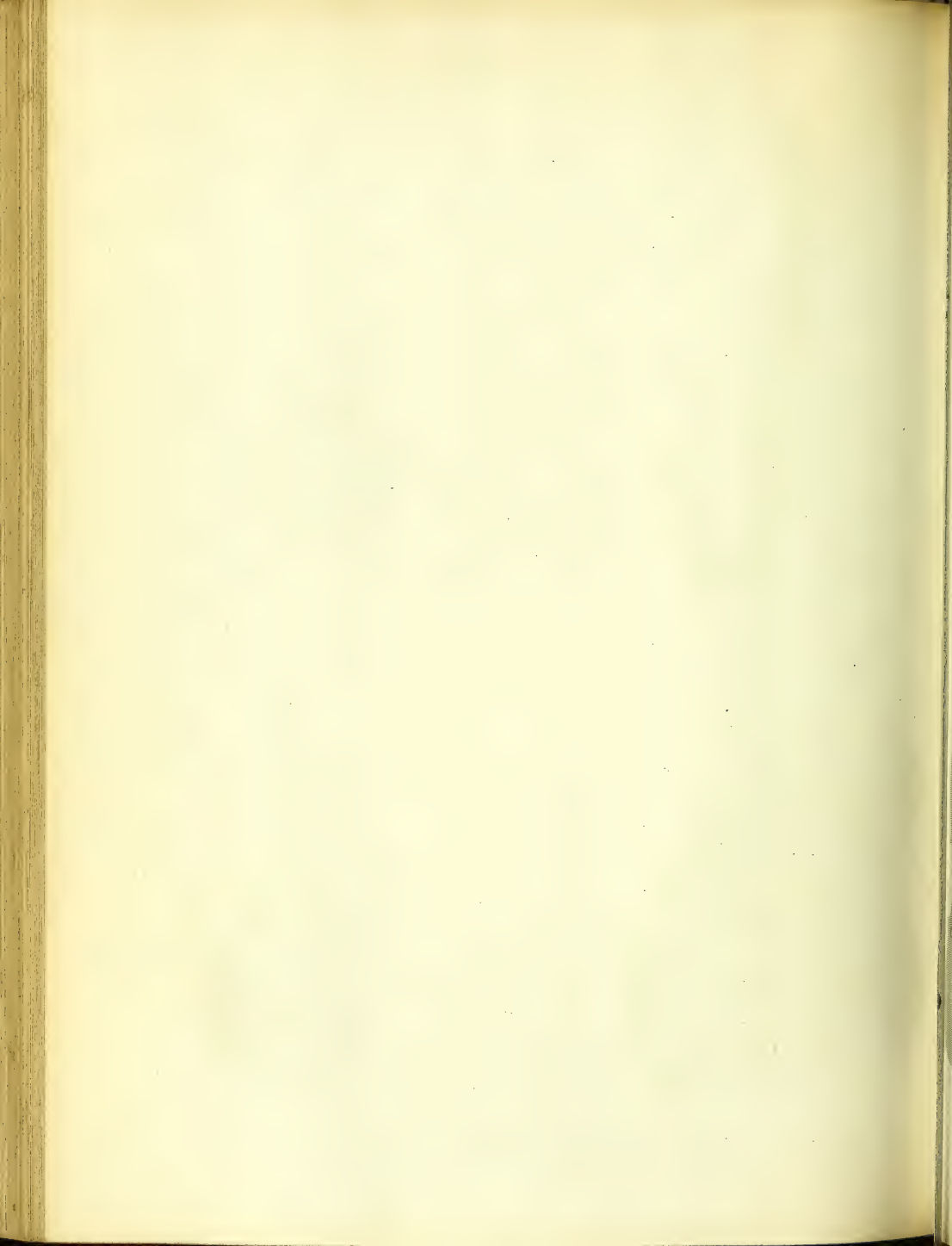


Fig. 3

Fig. 1 Arch Lute height $\frac{P}{5}$ to $\frac{6}{8}$ In the Collection of the late M^r. D. Walker Fig. 2 Mandoline the distance from Bridge to Nut same as Violin $\frac{13}{16}$ Fig. 3 Mandola varies in length from Bridge to Nut according to its pitch



MUSICAL INSTRUMENTS.

Fig. 3



Fig. 1

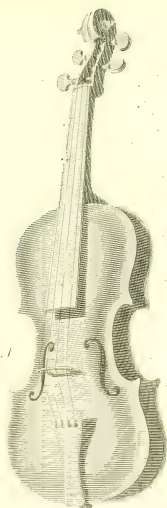


Fig. 2



Fig. 5

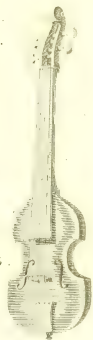
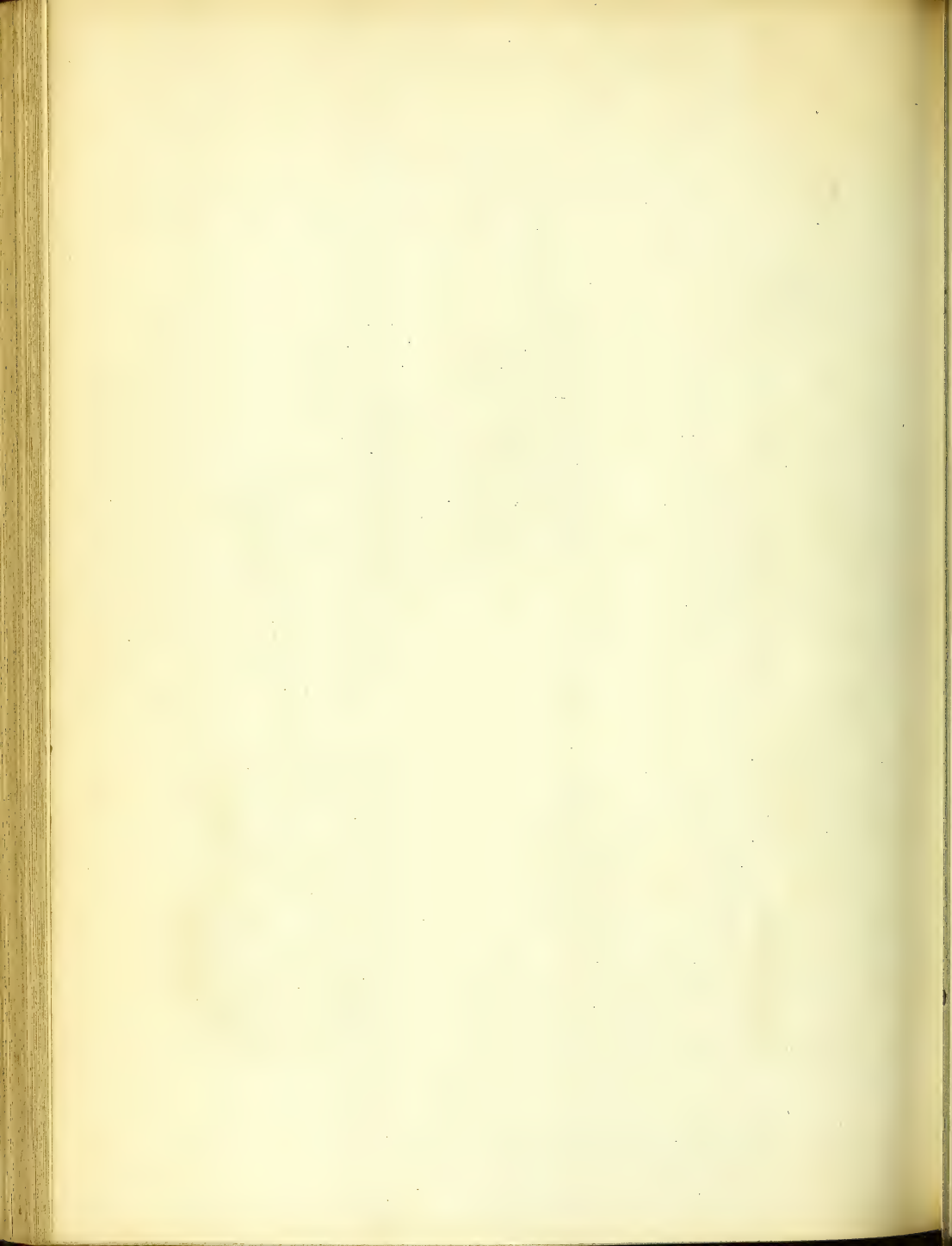


Fig. 6



Fig. 1 & 2 Violin and Bow. Fig. 3 Scroll or Mate. Fig. 4 Violoncello.

Fig. 5 Violino Piccola or Kist. Fig. 6 Viol da Gamba or the 16th Century.



MUSICAL INSTRUMENTS.

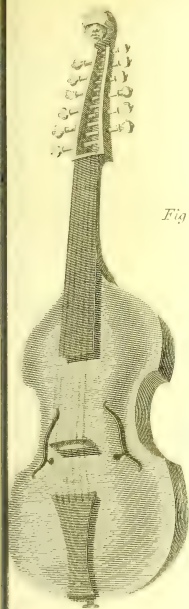


Fig. 1

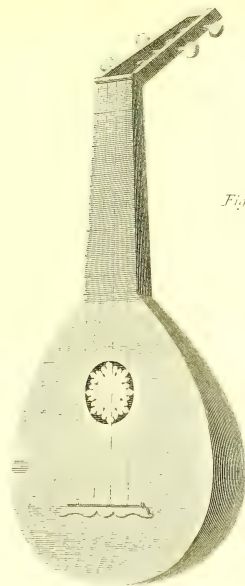


Fig. 2

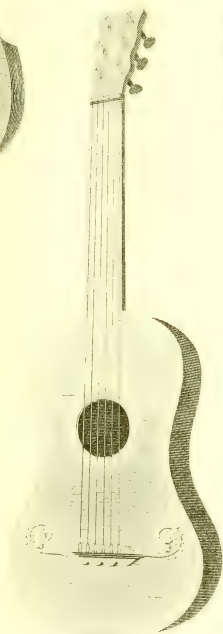


Fig. 3

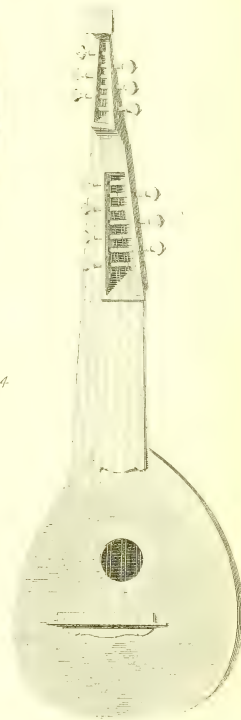


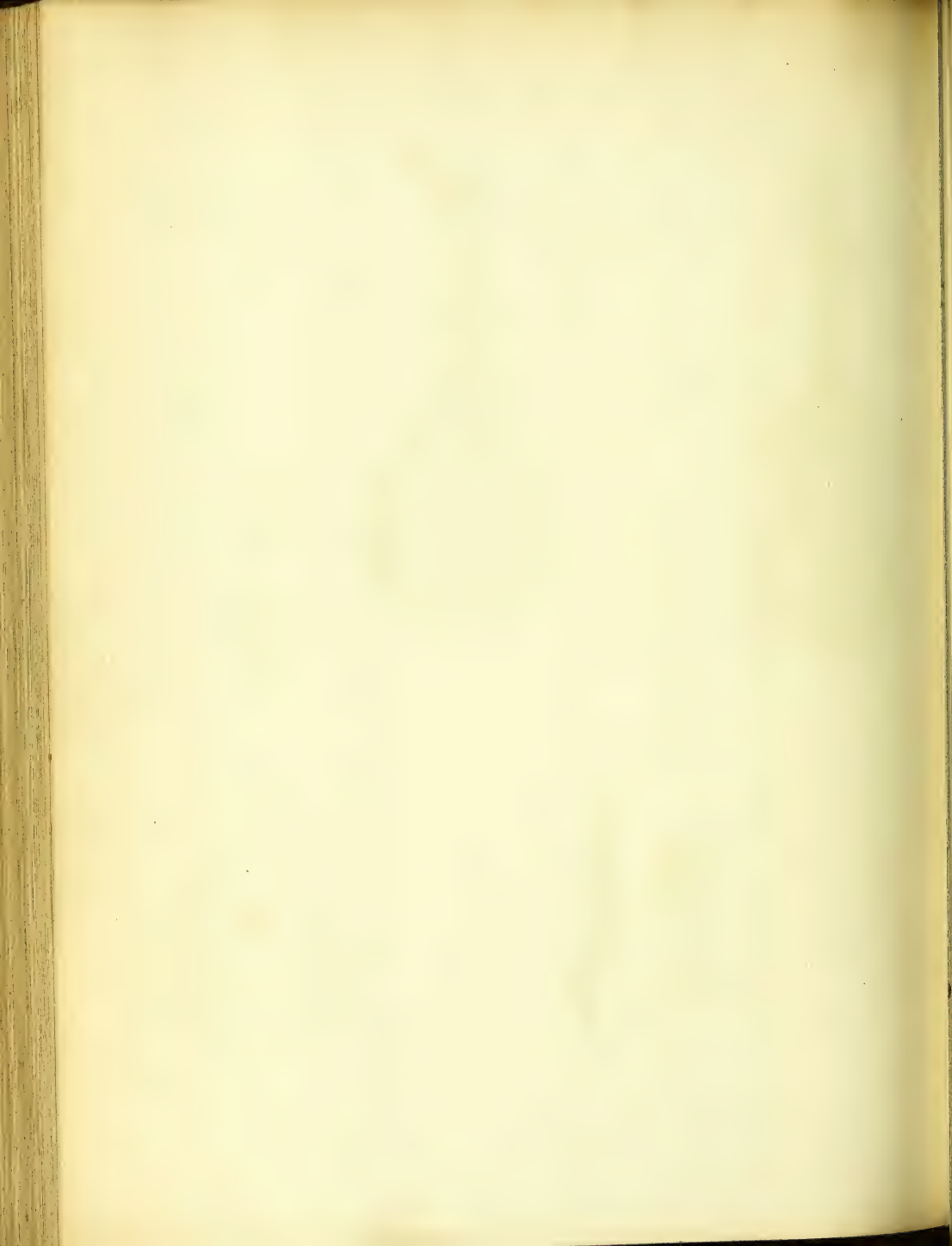
Fig. 4

Fig. 1 Viol d'Amour height 2 1

Fig. 2 Mandore

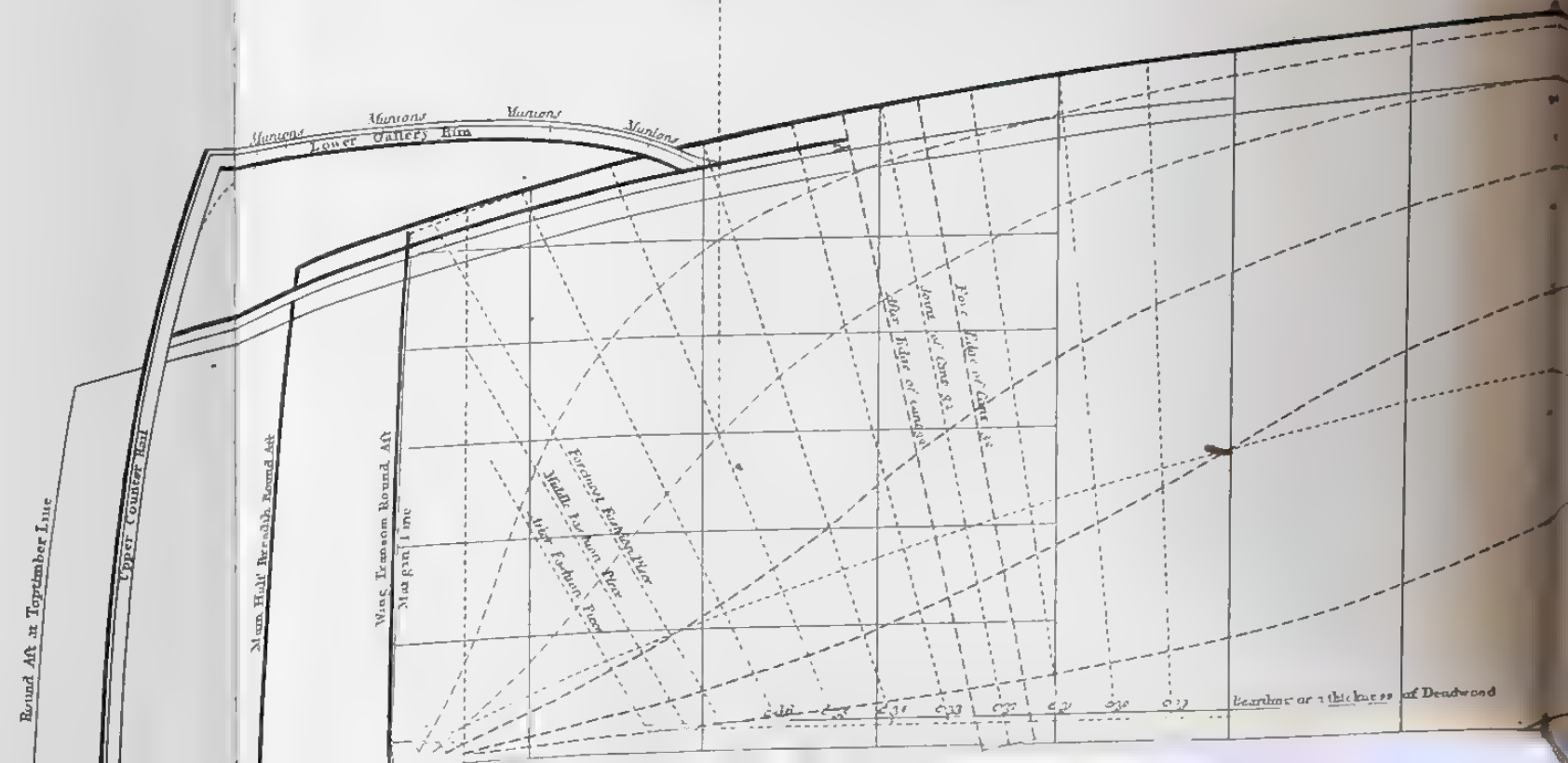
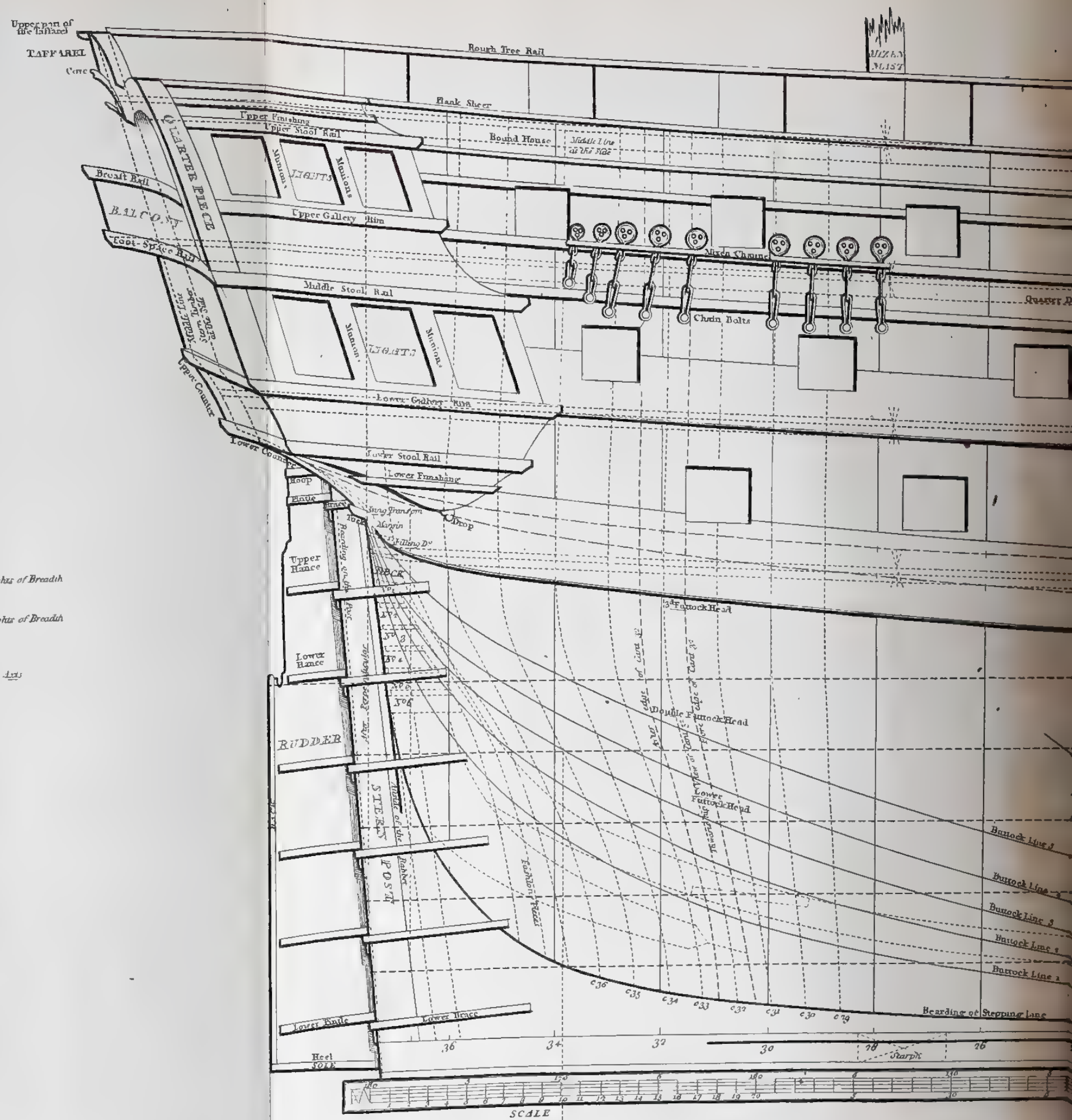
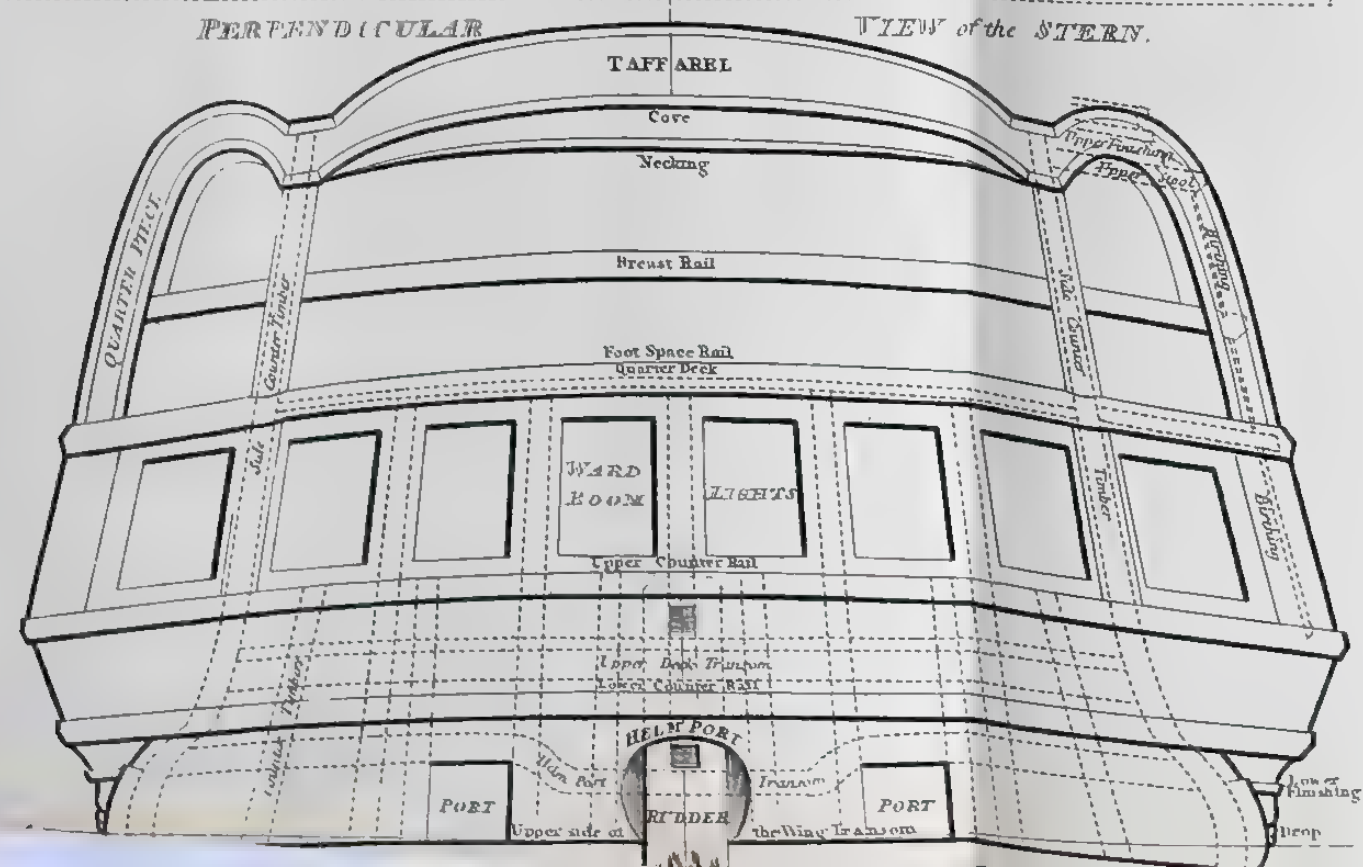
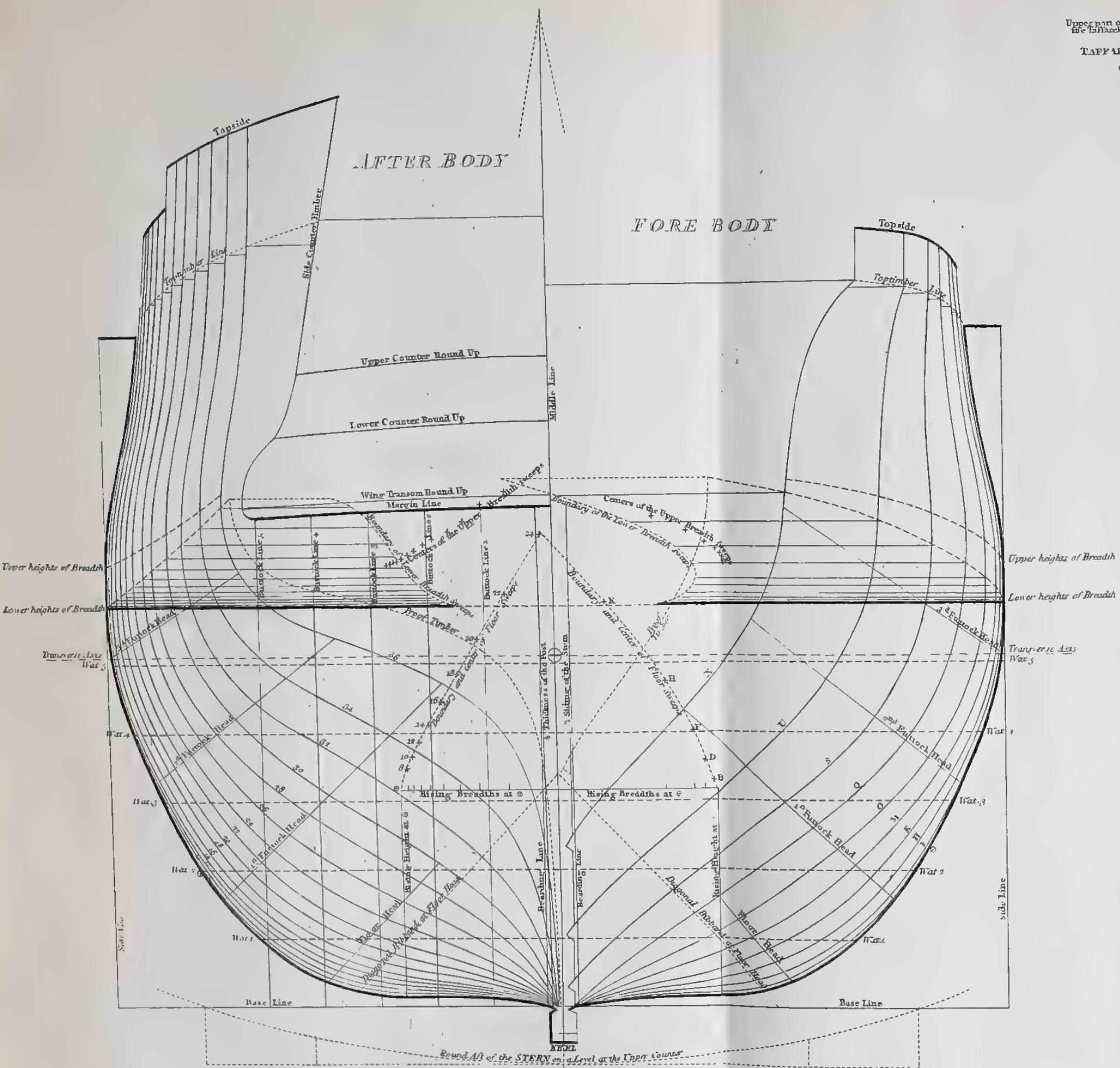
Fig. 3 Spanish Guitar height 3.1

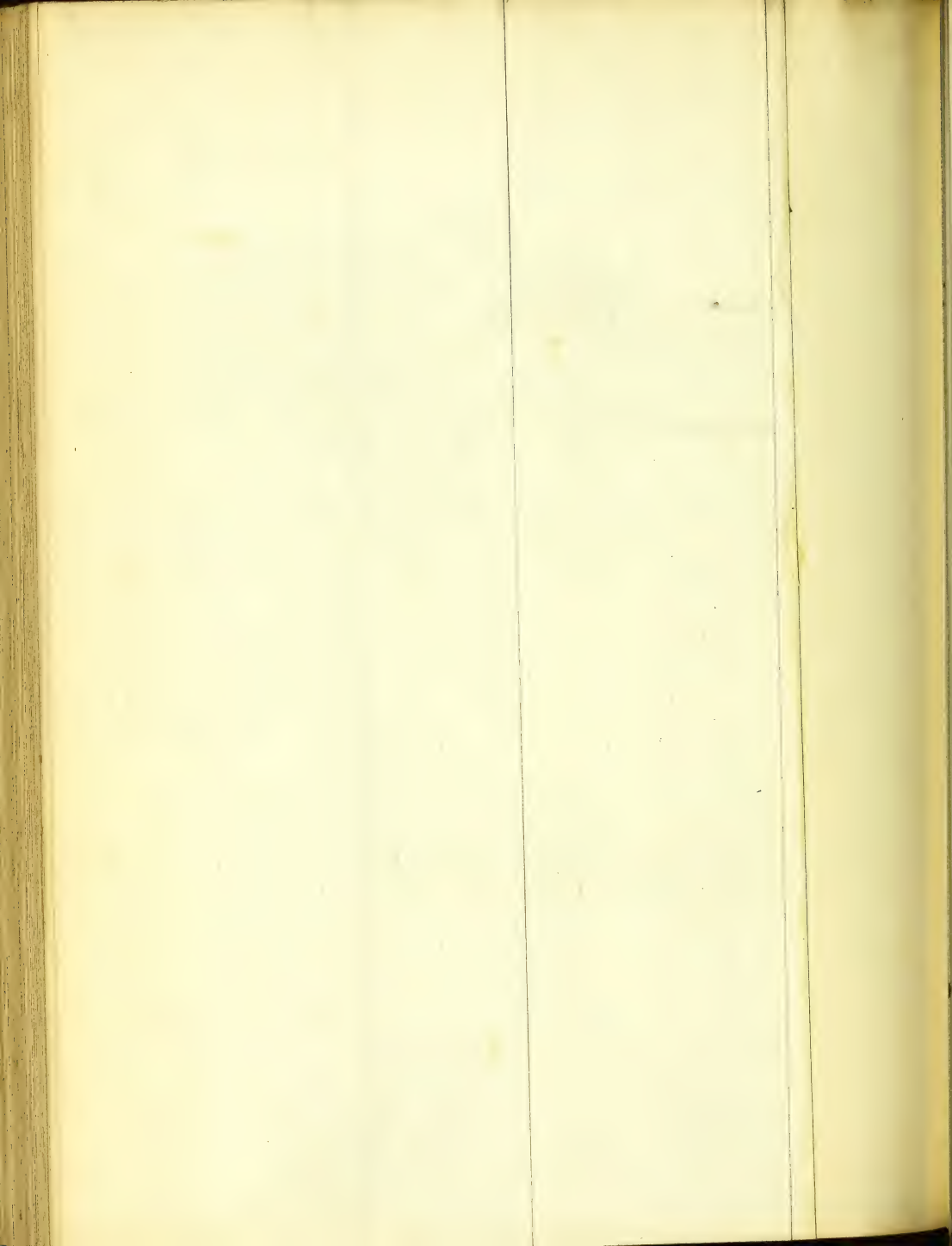
Fig. 4 Lute height 3.8

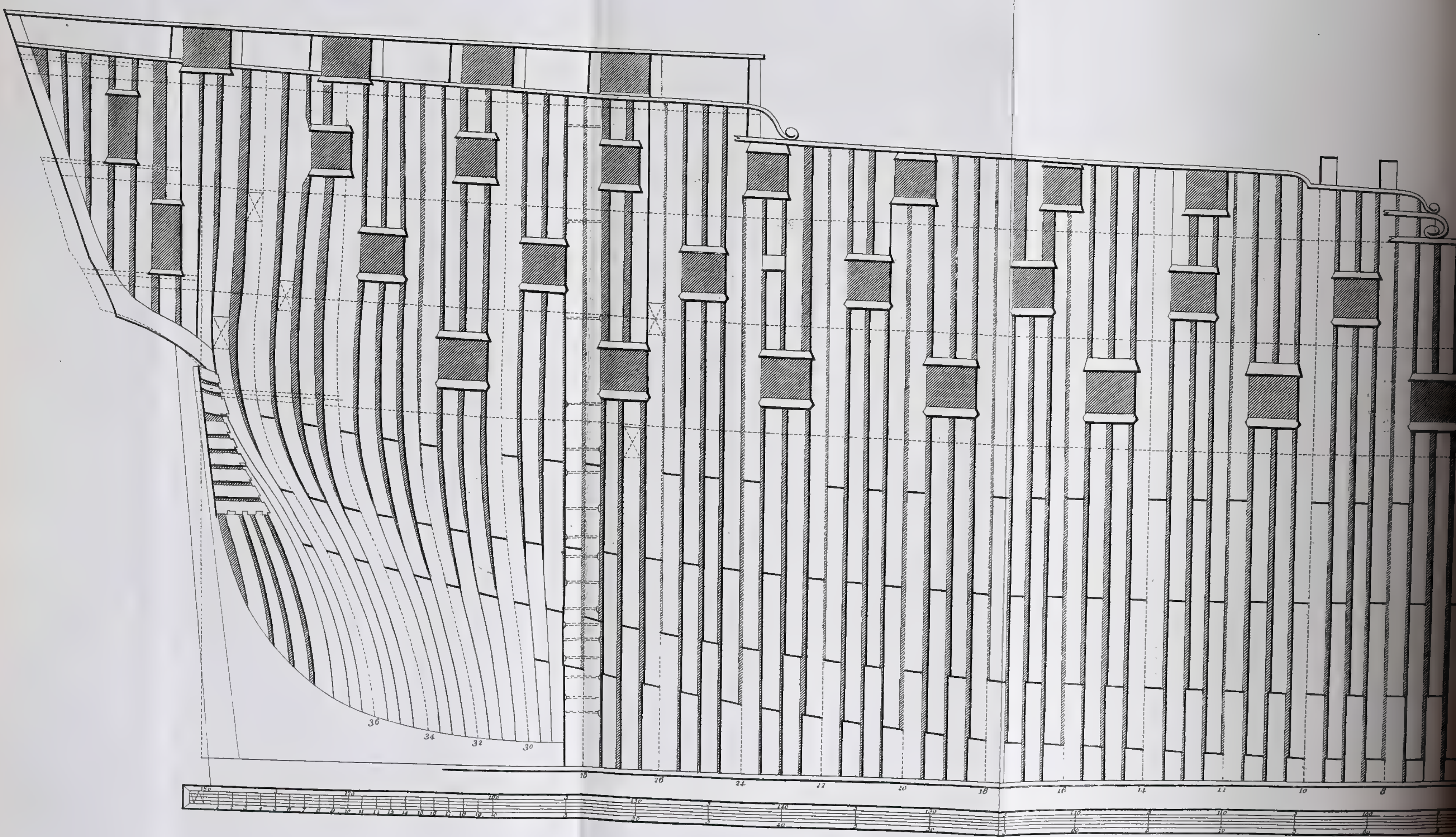


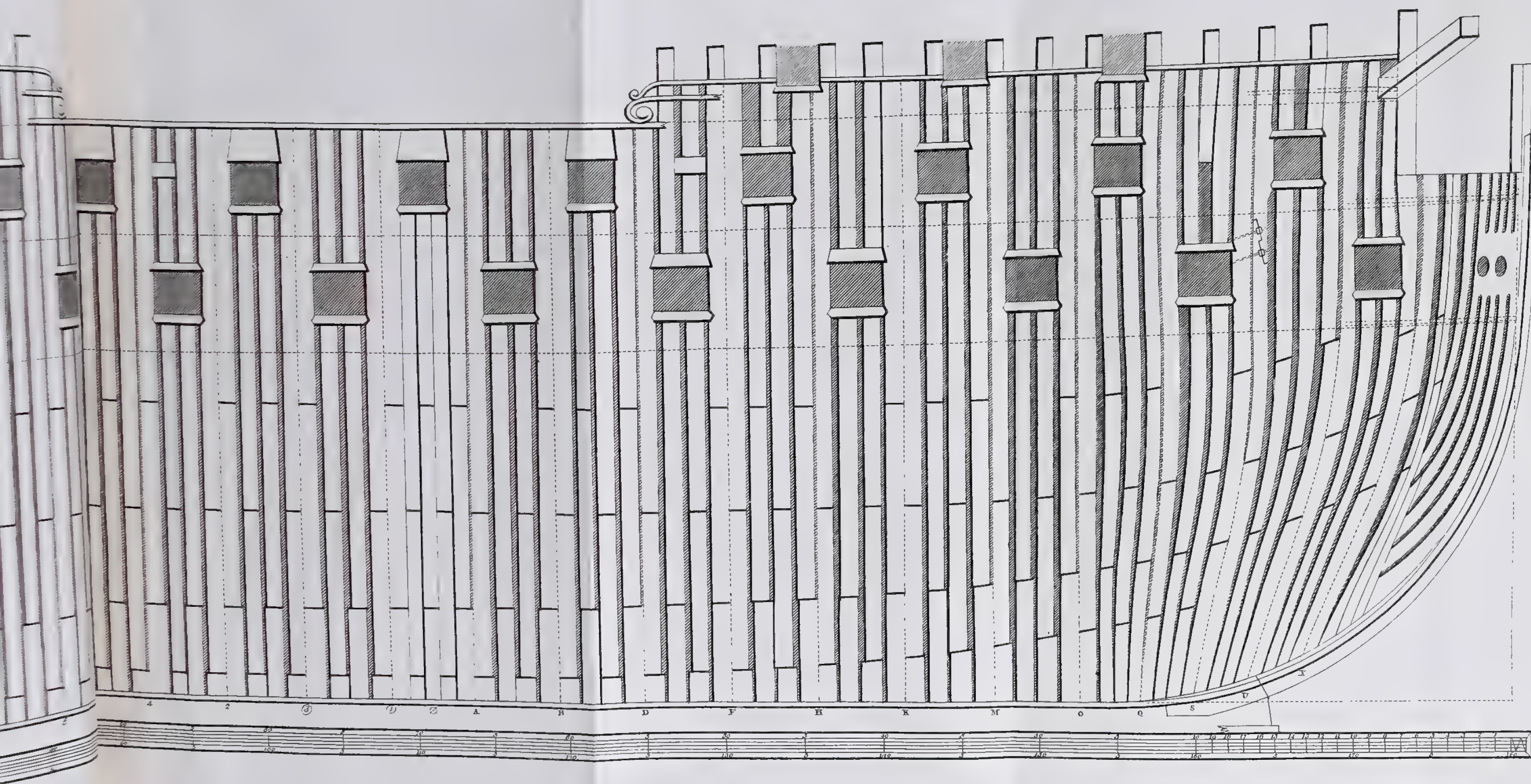
BODY PLAN

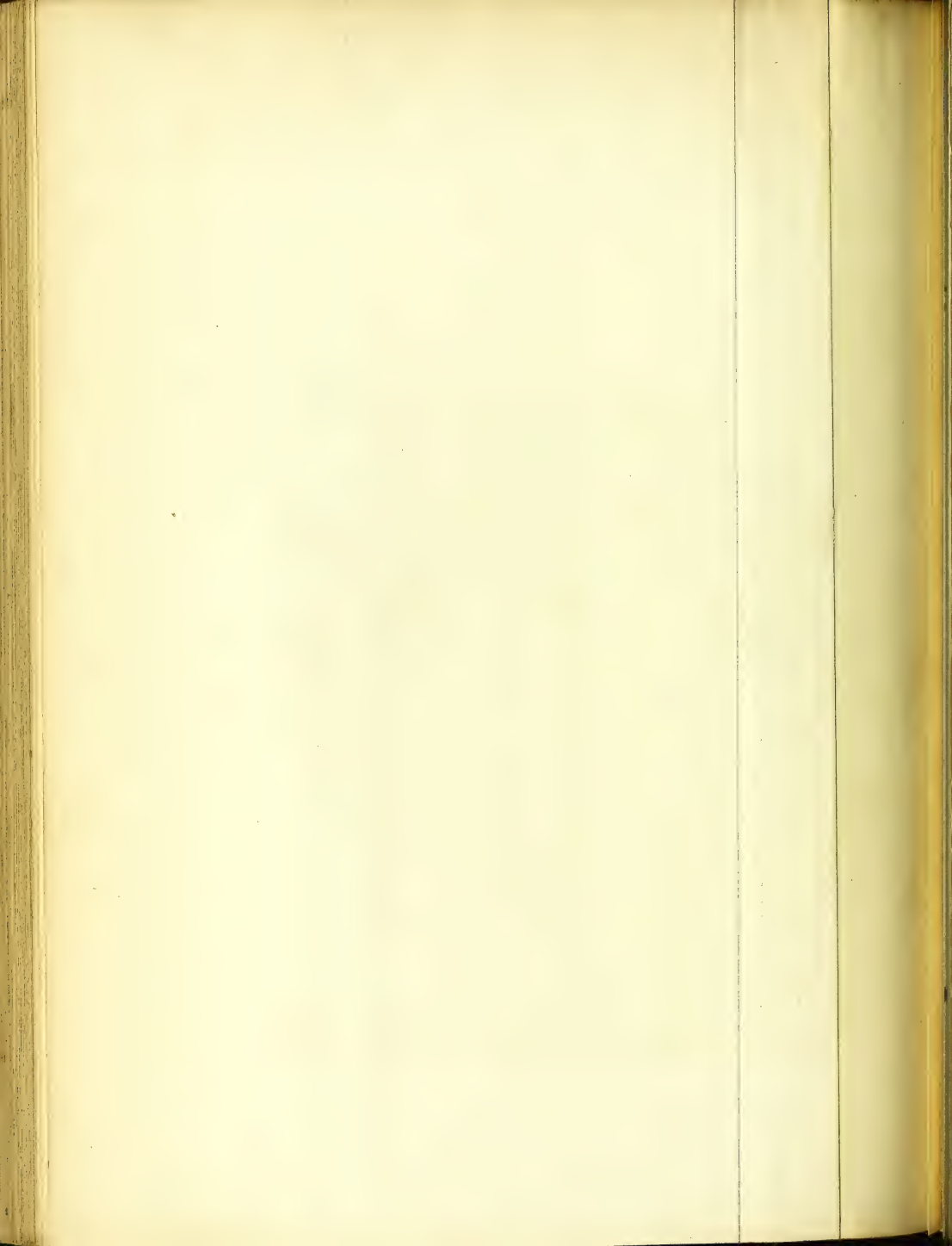
Center of the Stern below



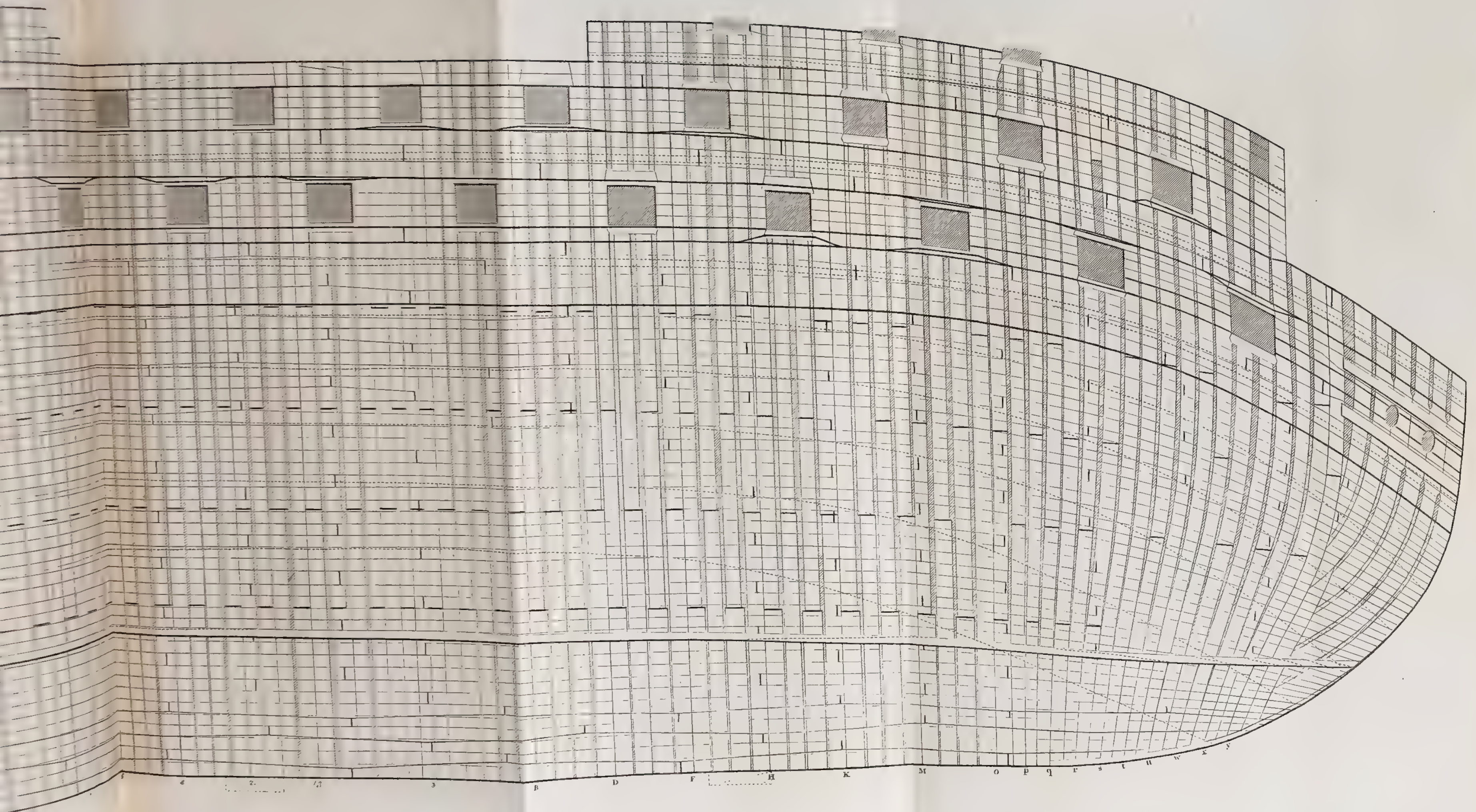




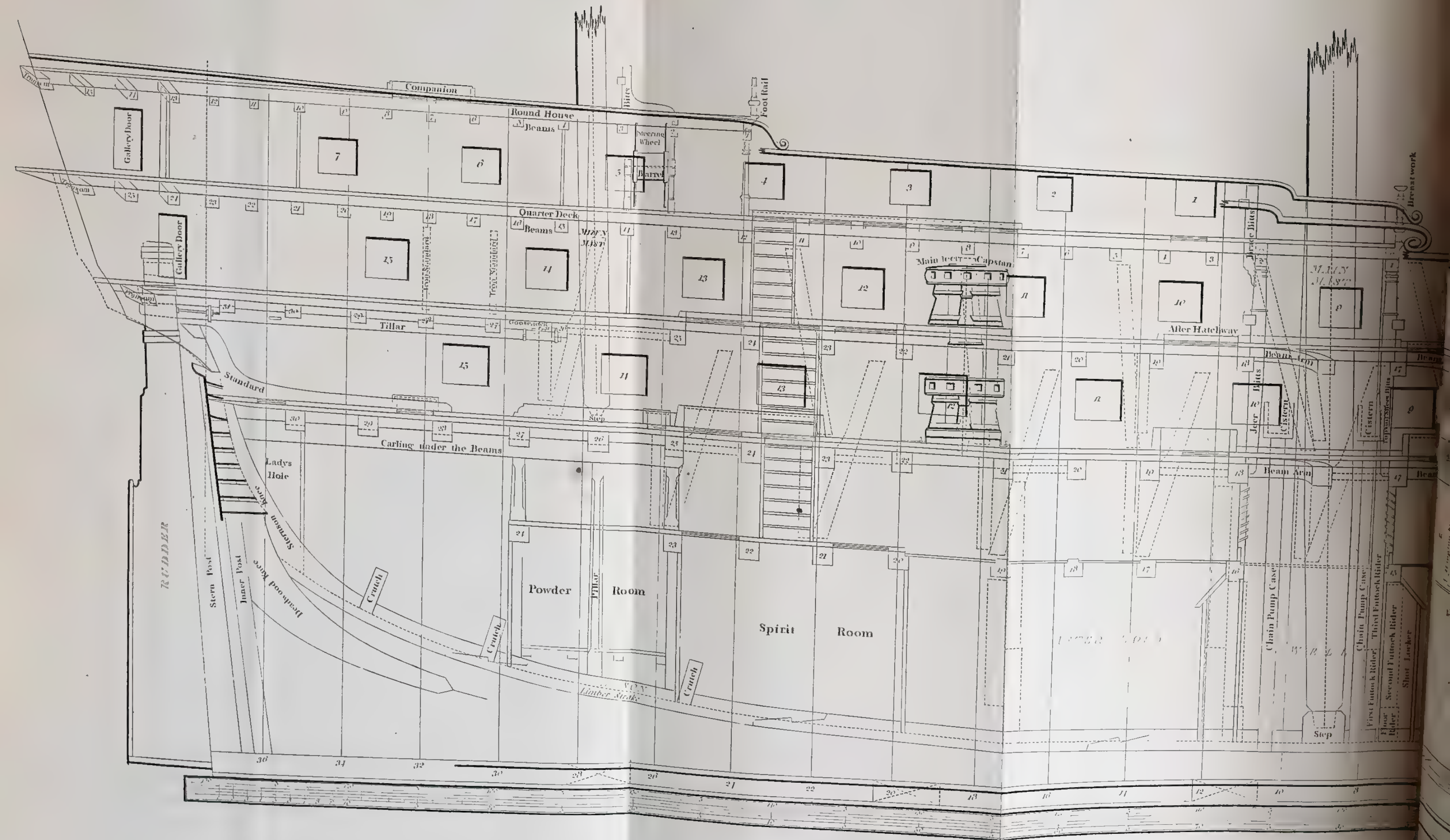








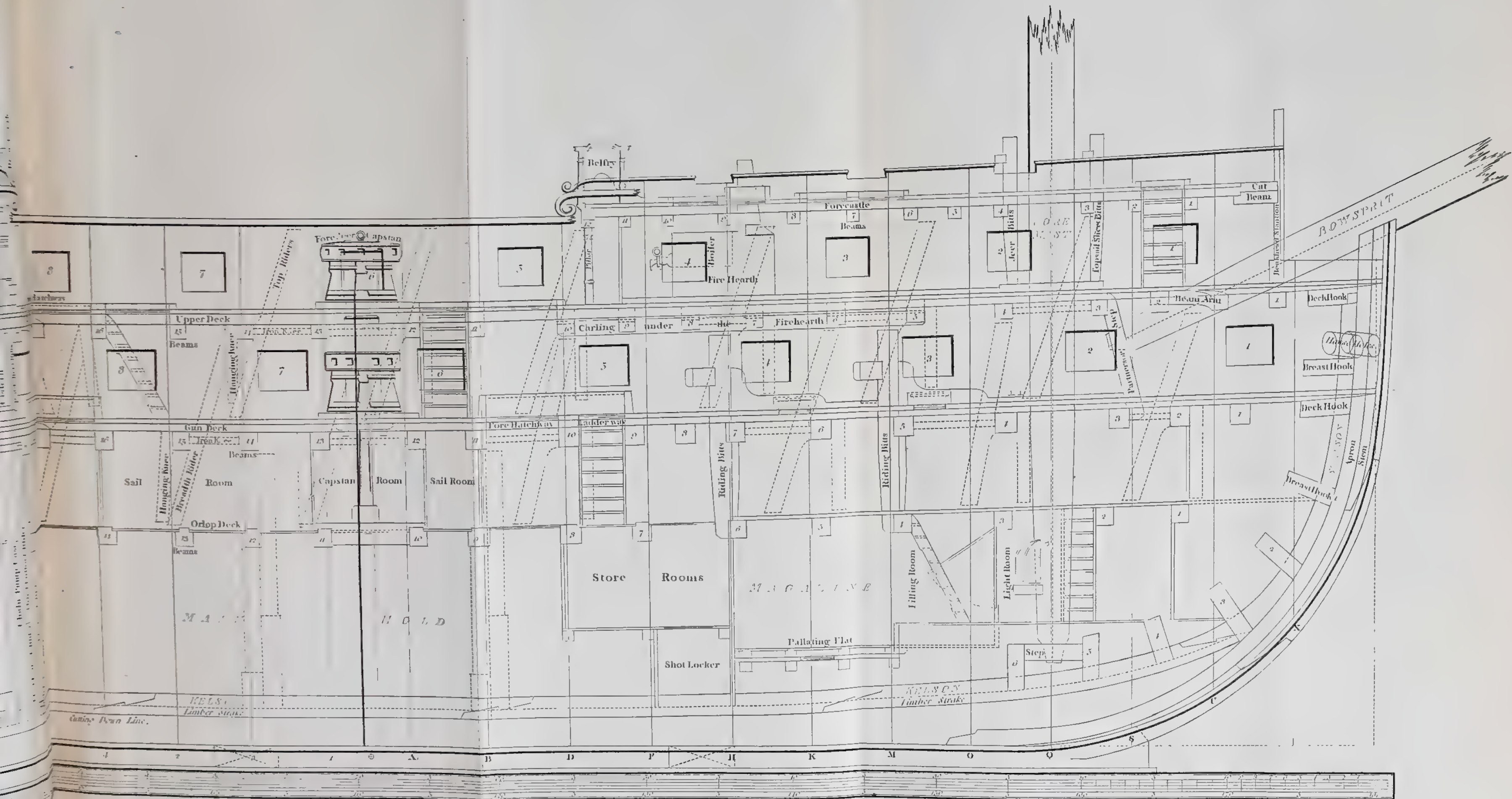
NAVAL ARCHITECTURE
 PROFILE OF A
 INBOARD

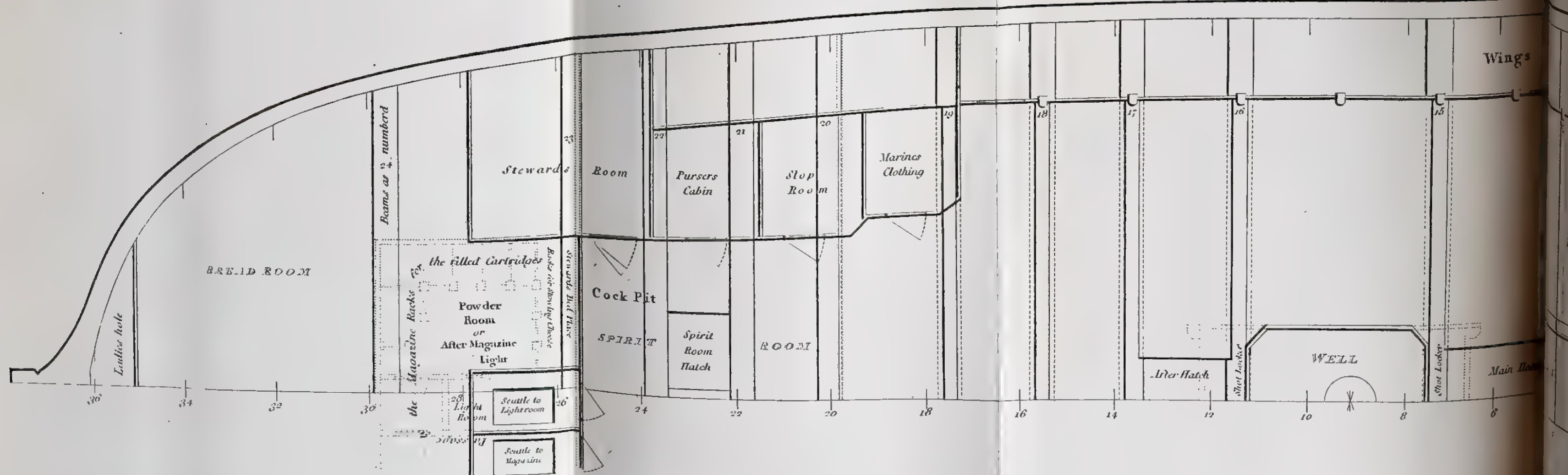
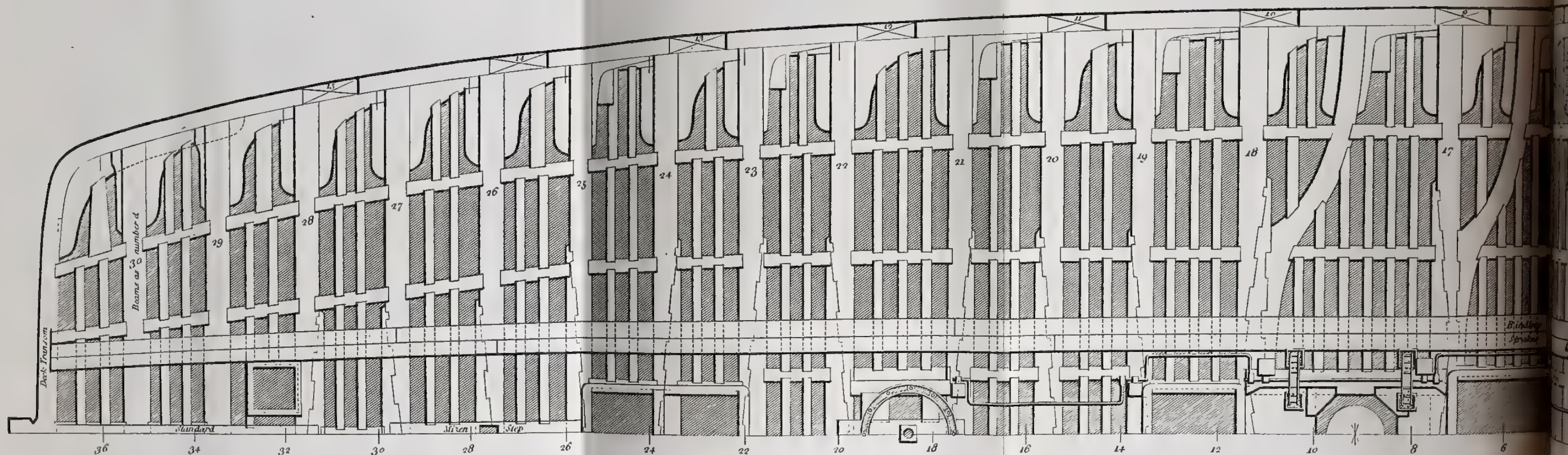


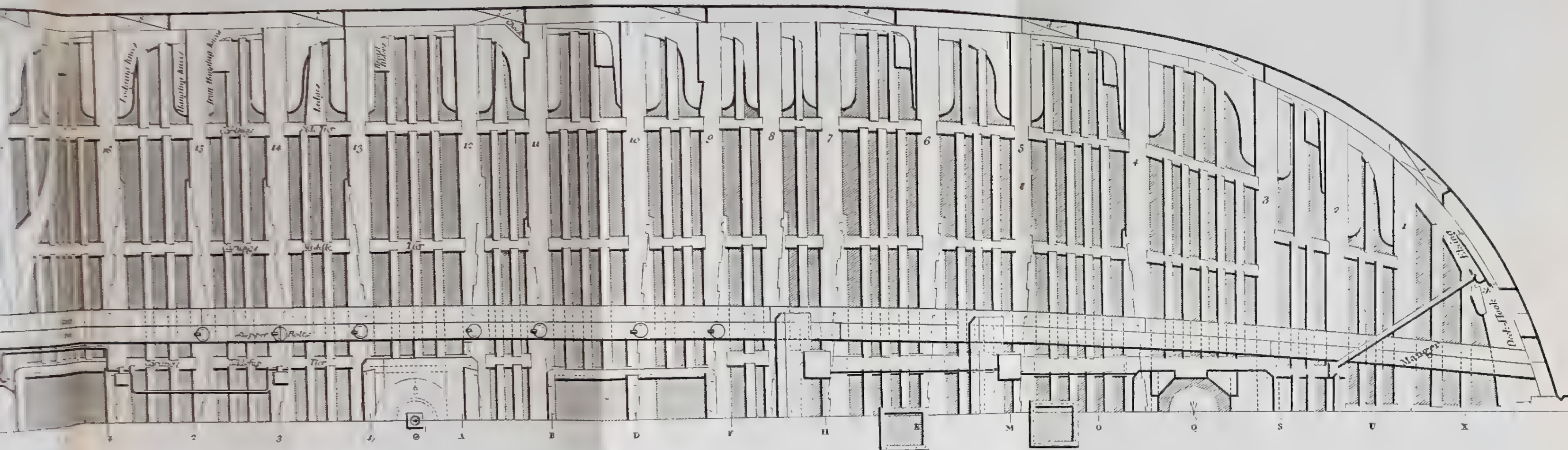
STRUCTURE.

SHIP OF 74 GUNS.

Works.







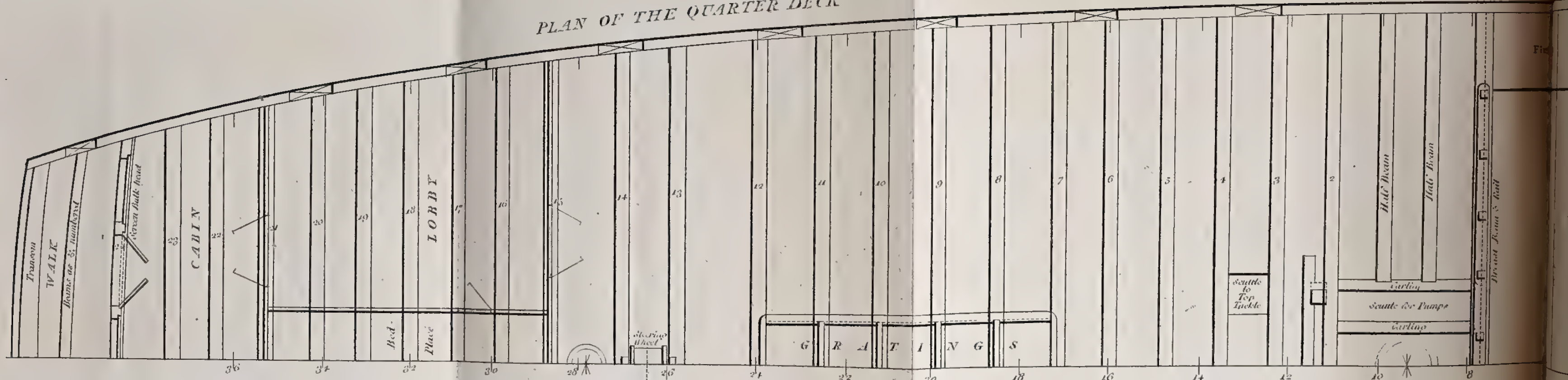
PLAN OF ORLOP.



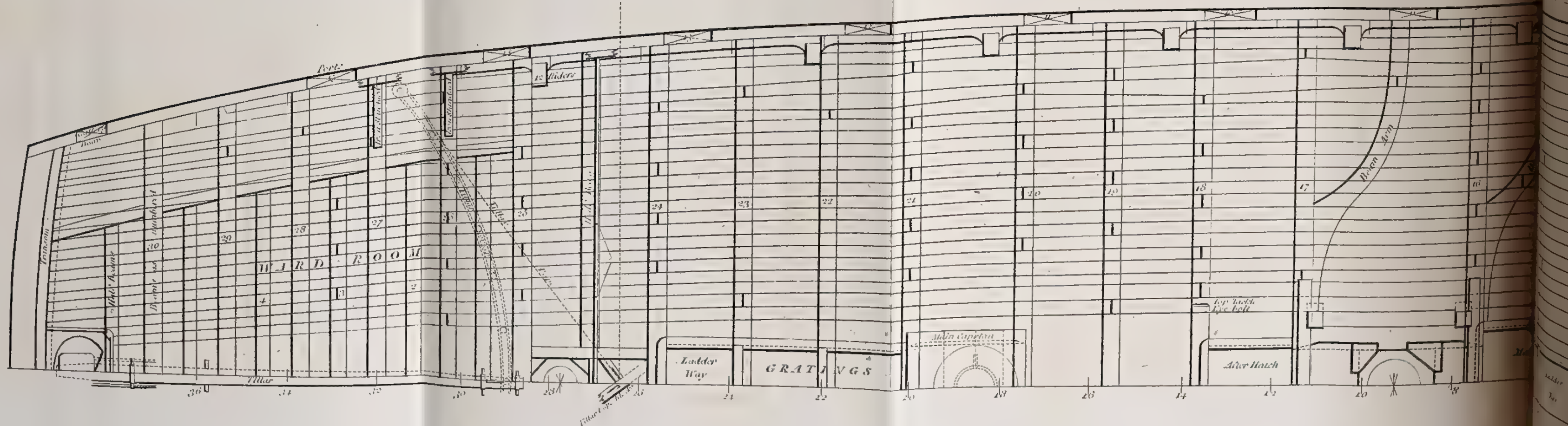


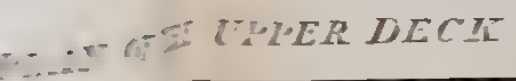


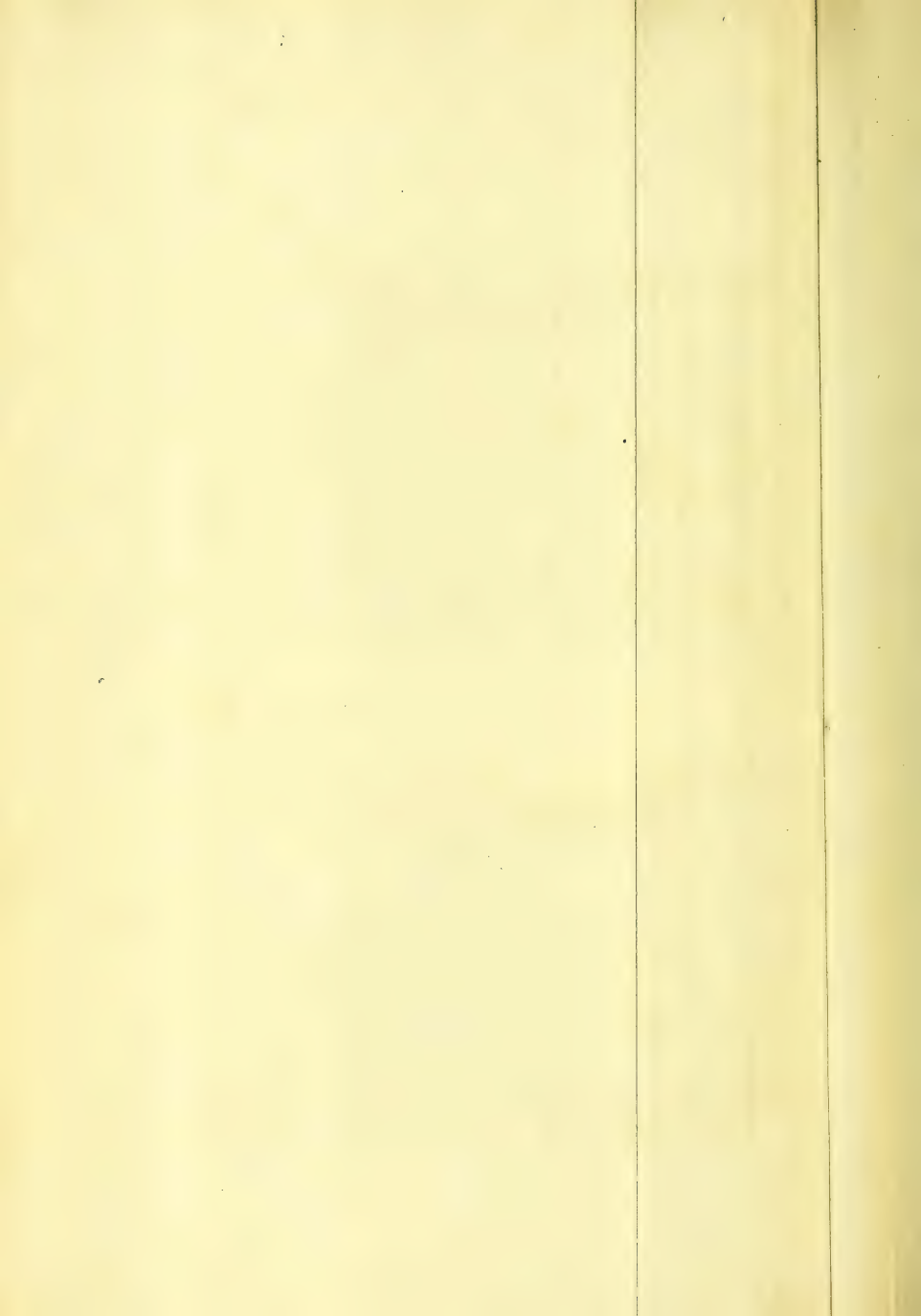
PLAN OF THE QUARTER DECK

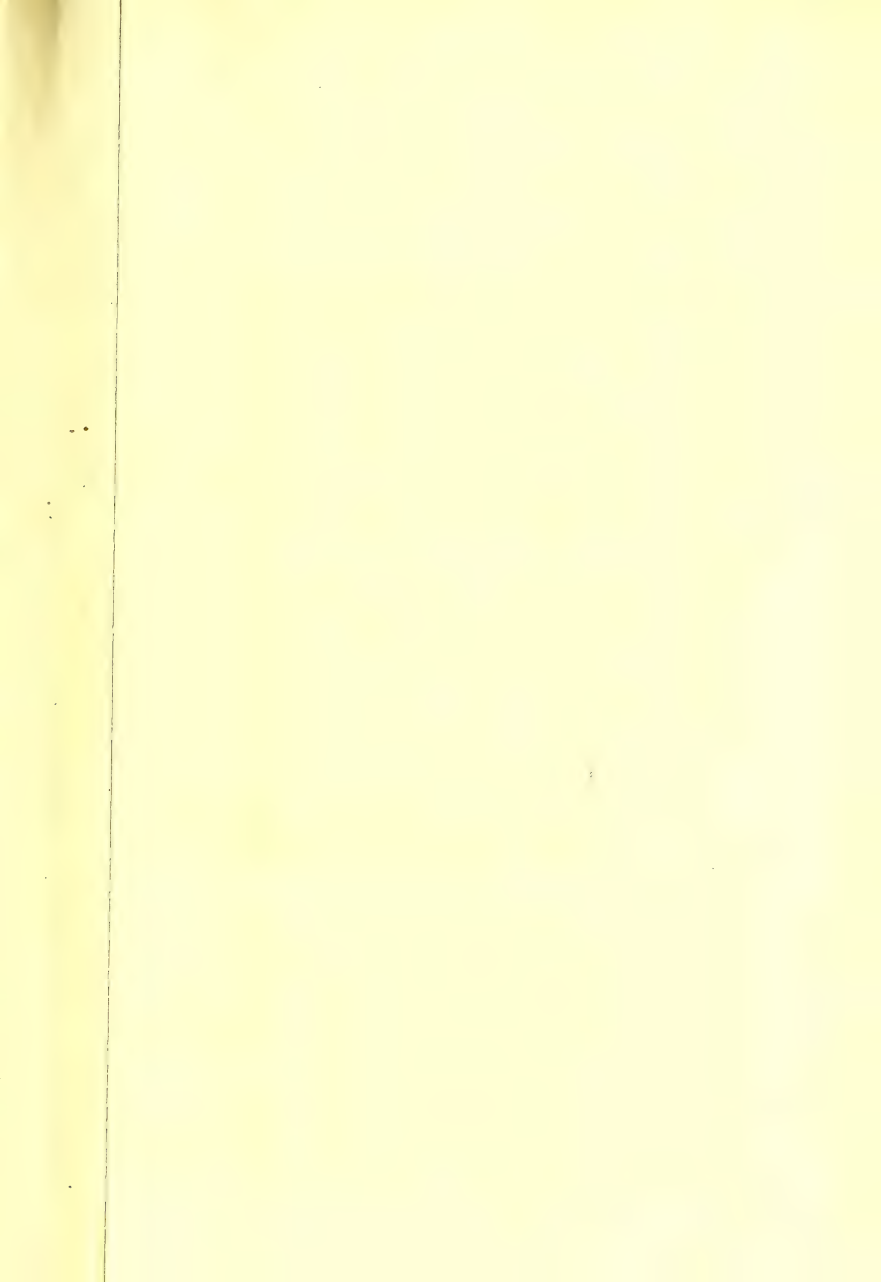


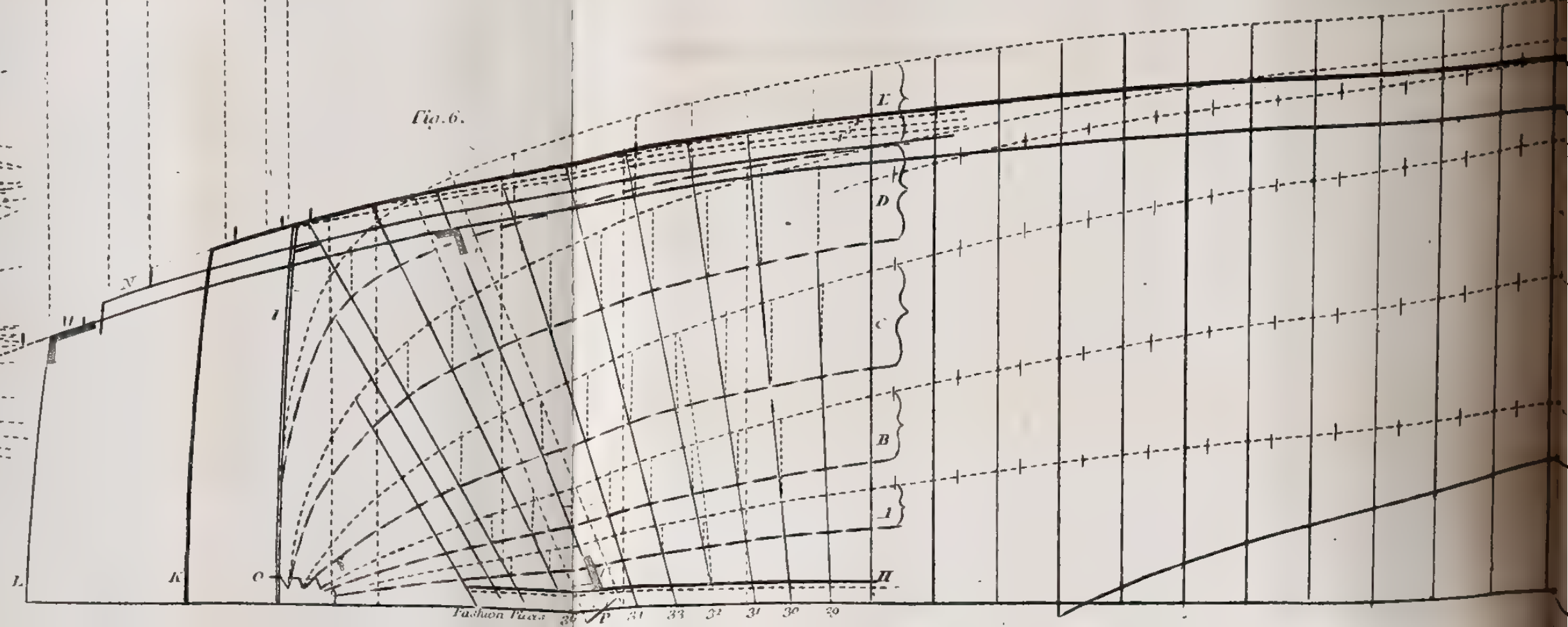
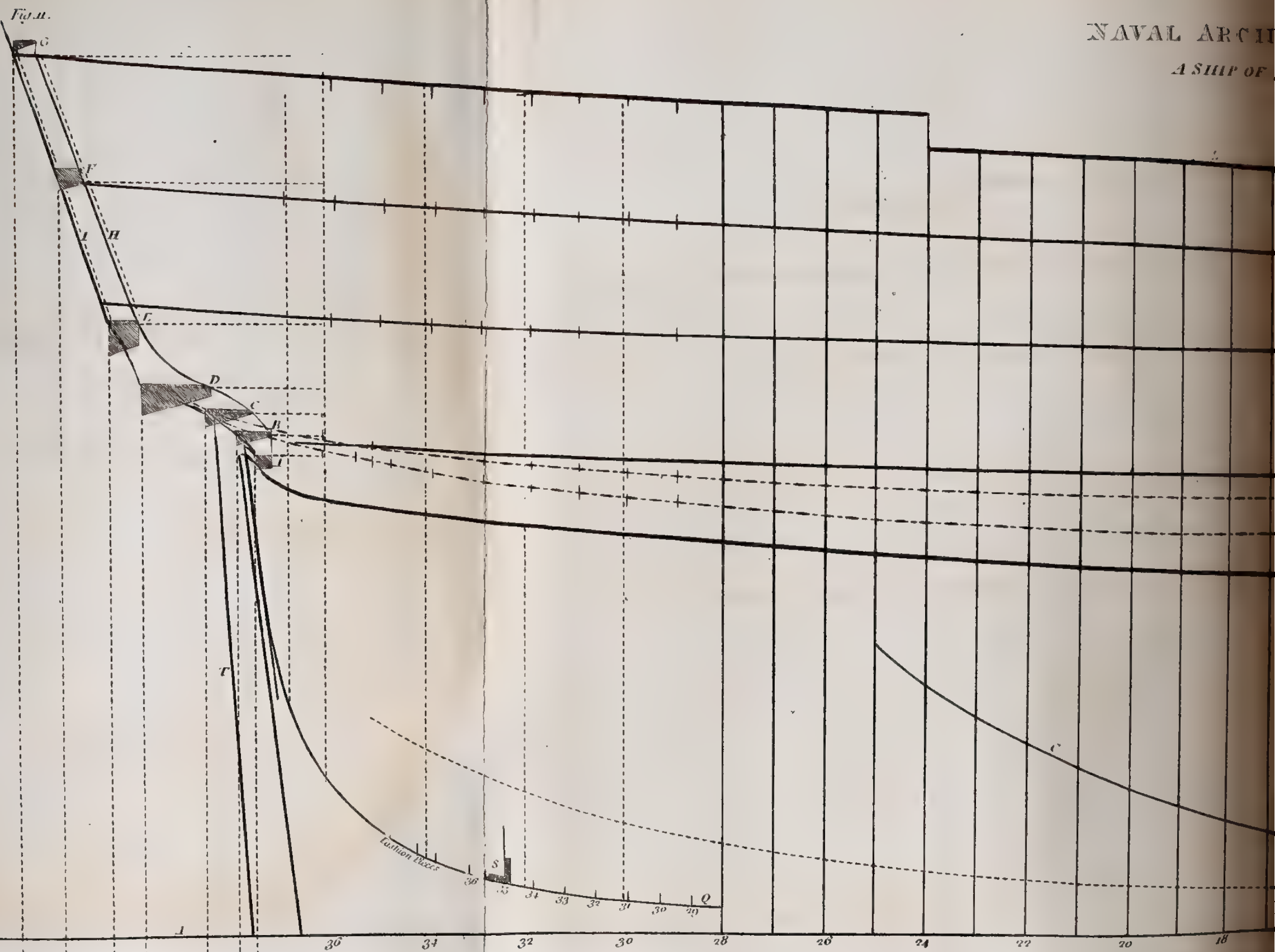
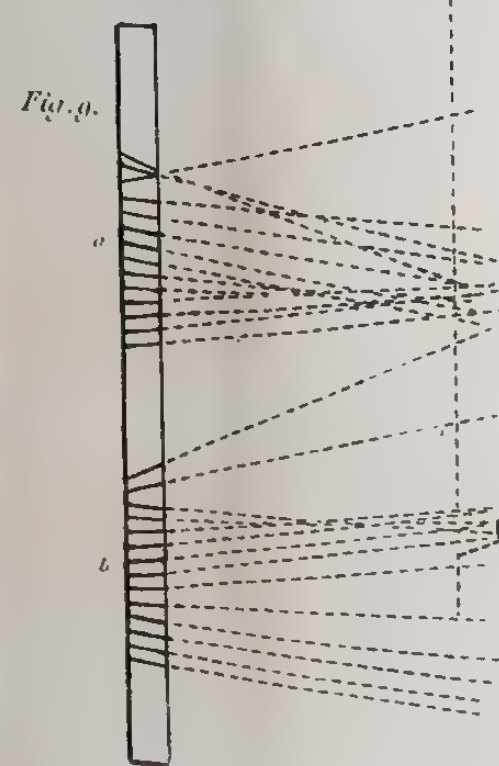
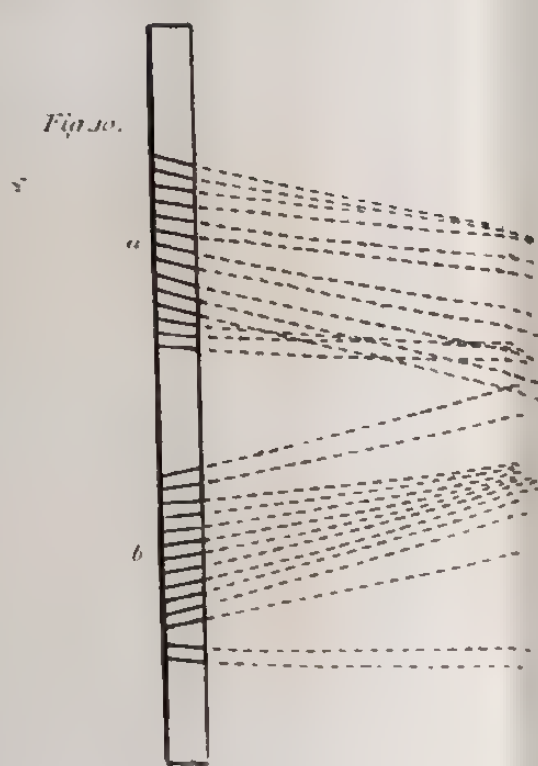
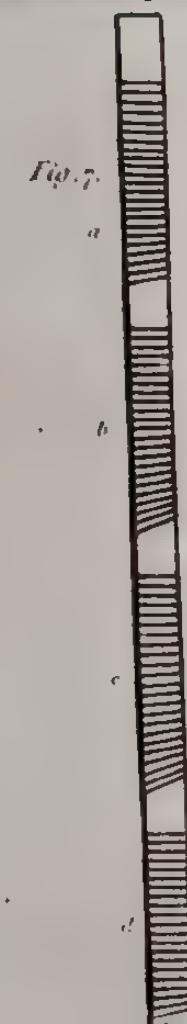
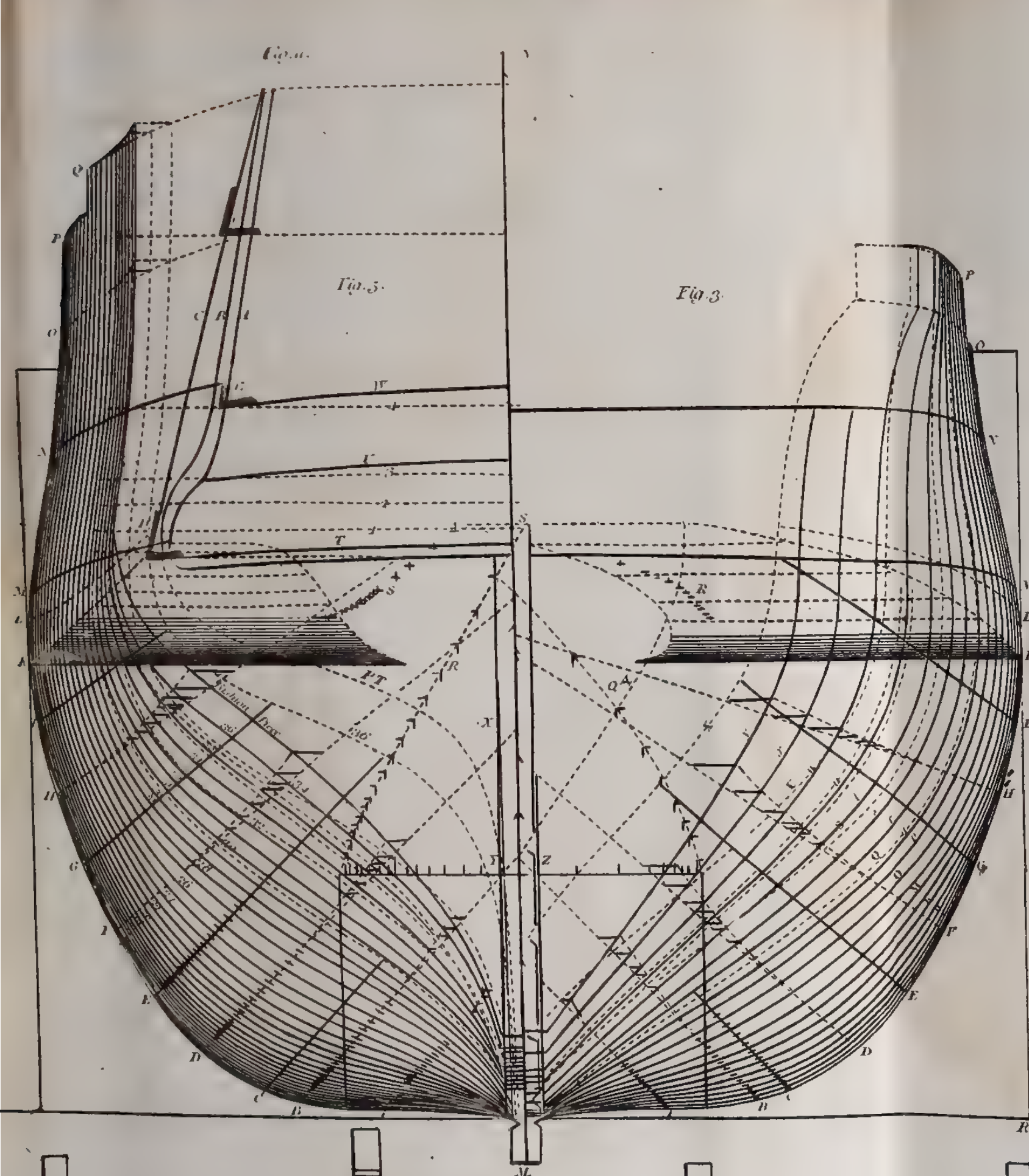
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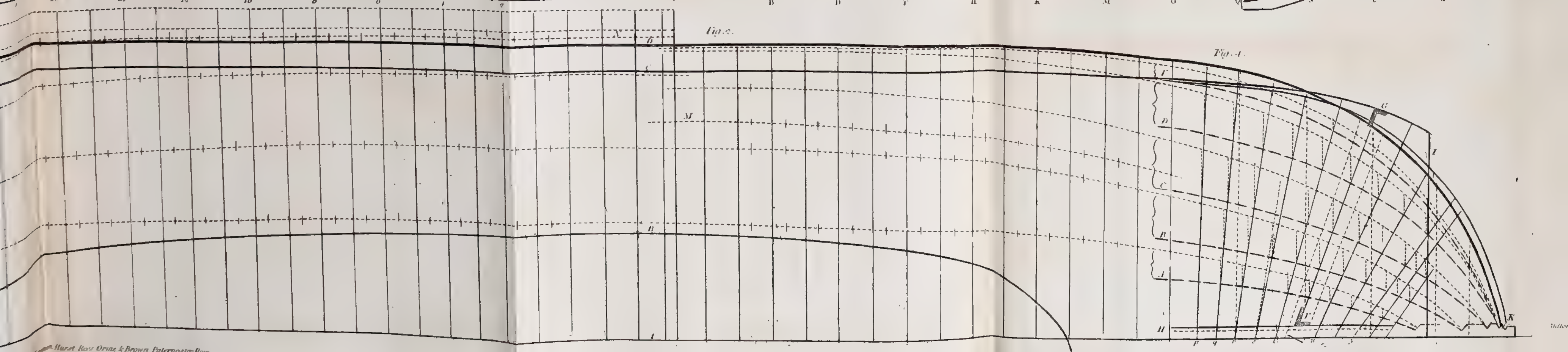
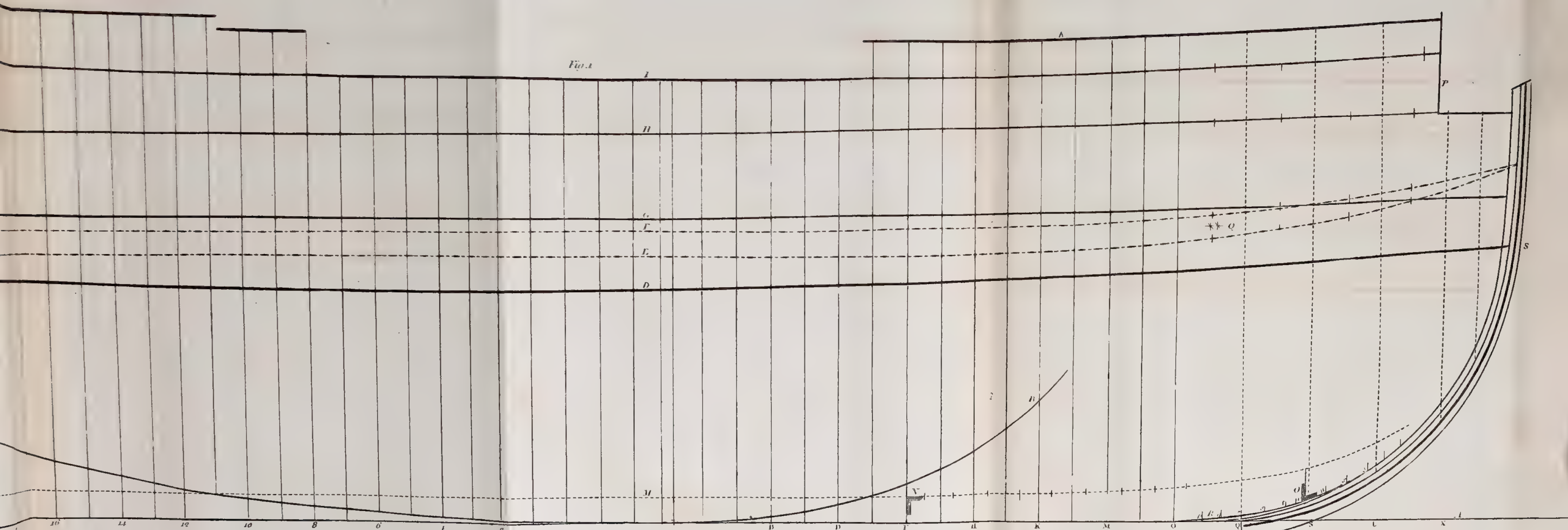












1871

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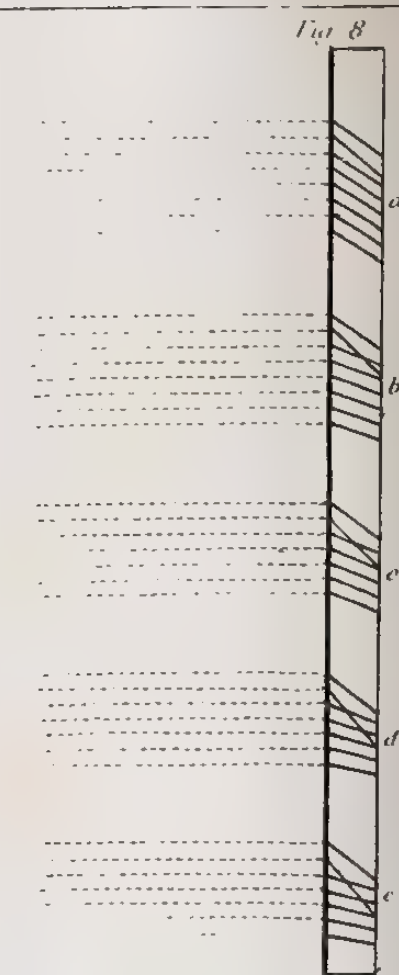
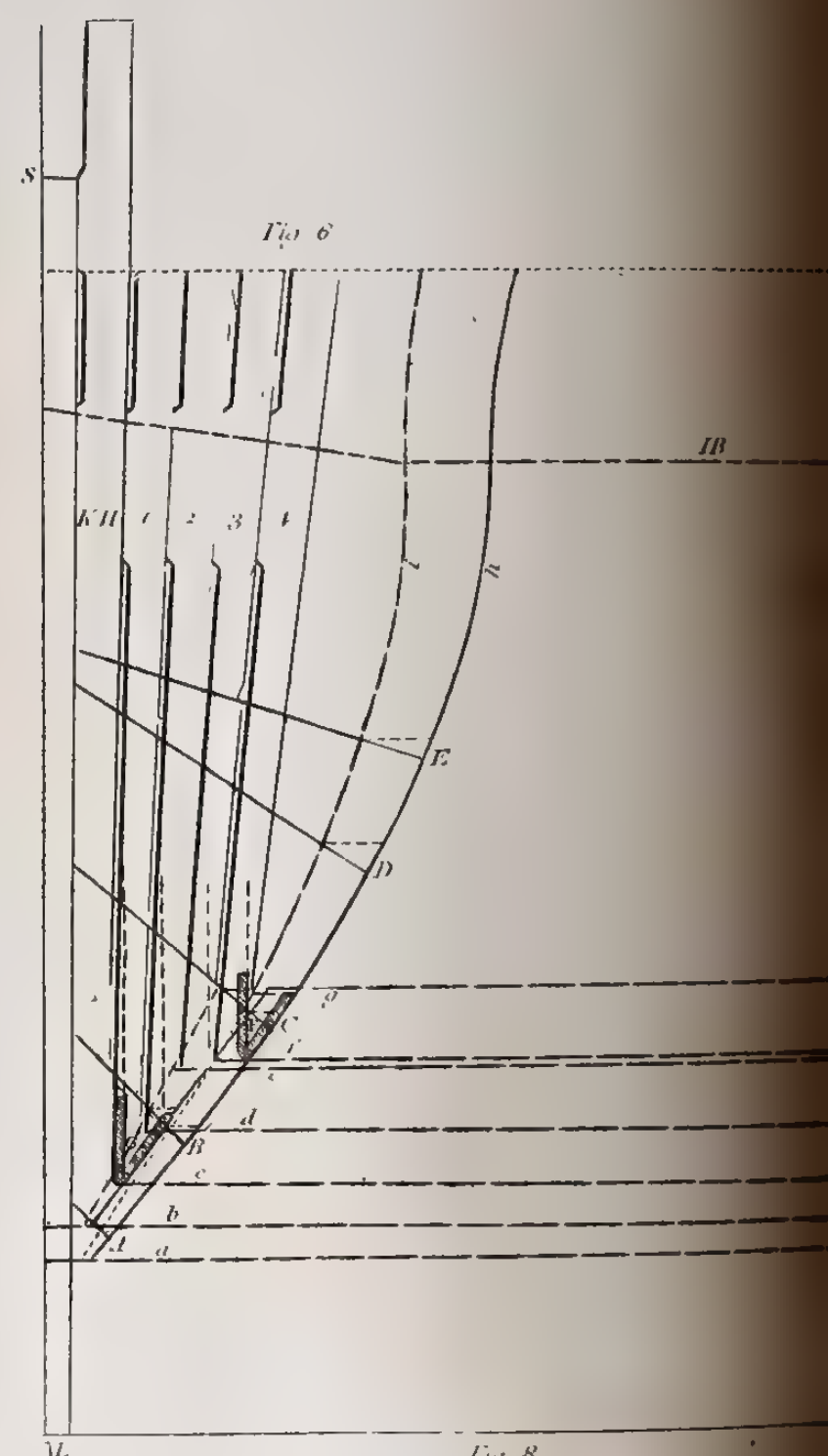
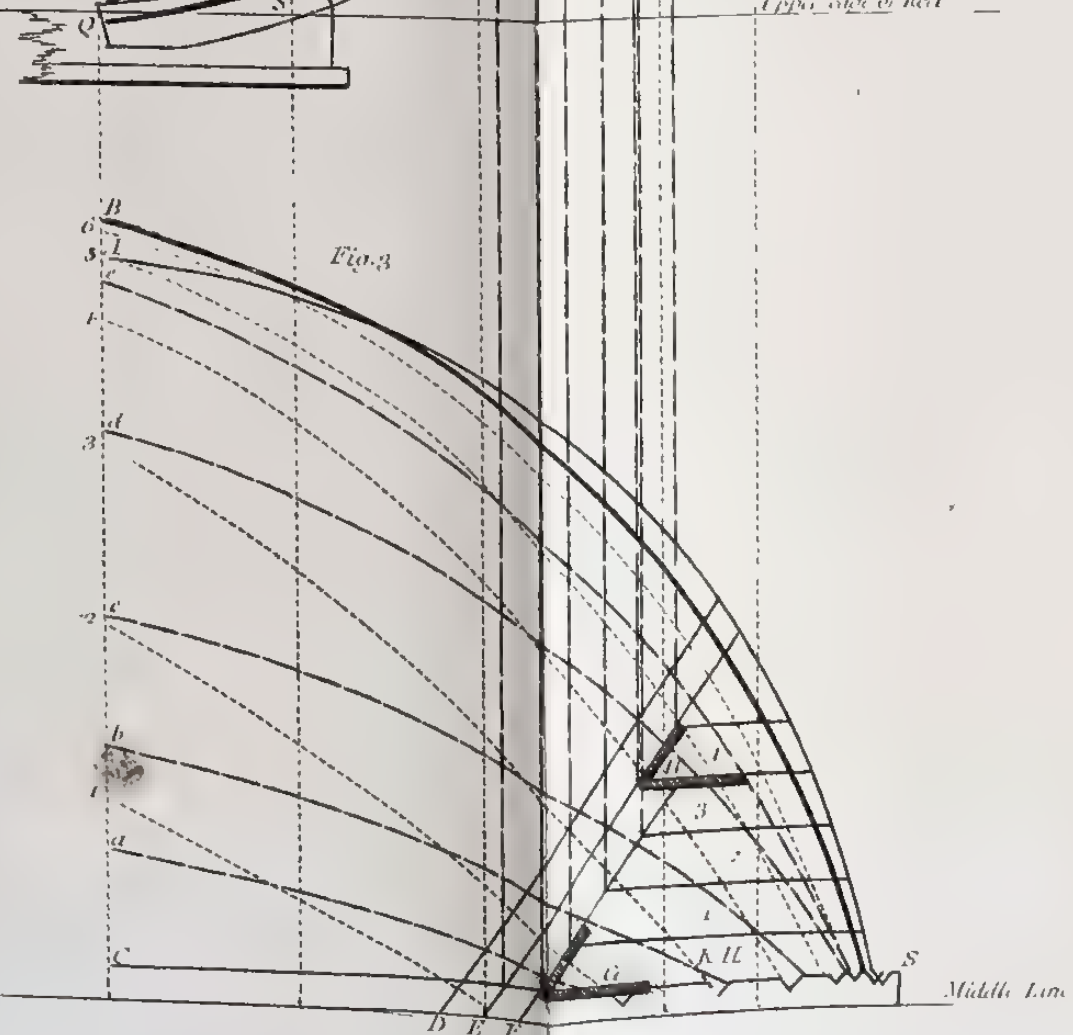
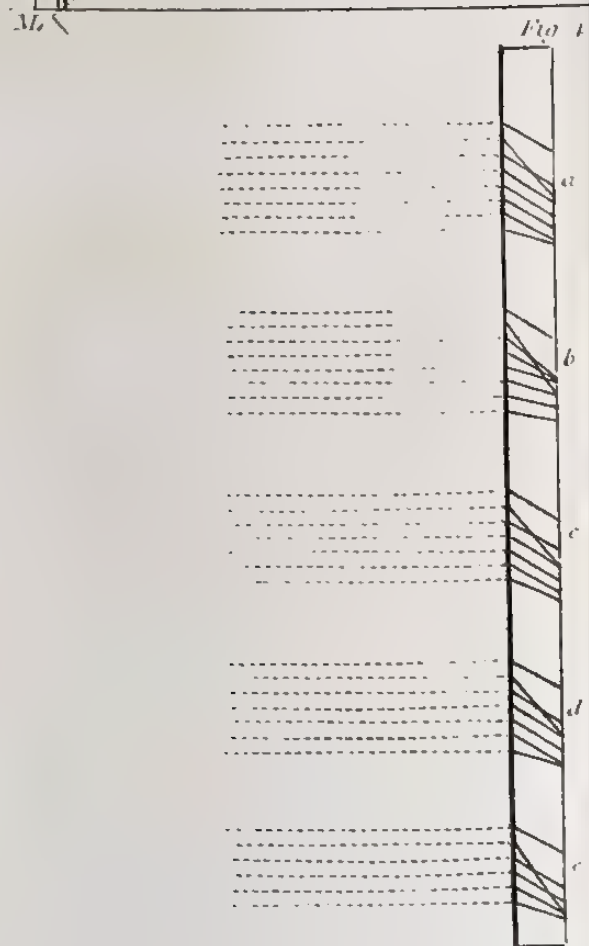
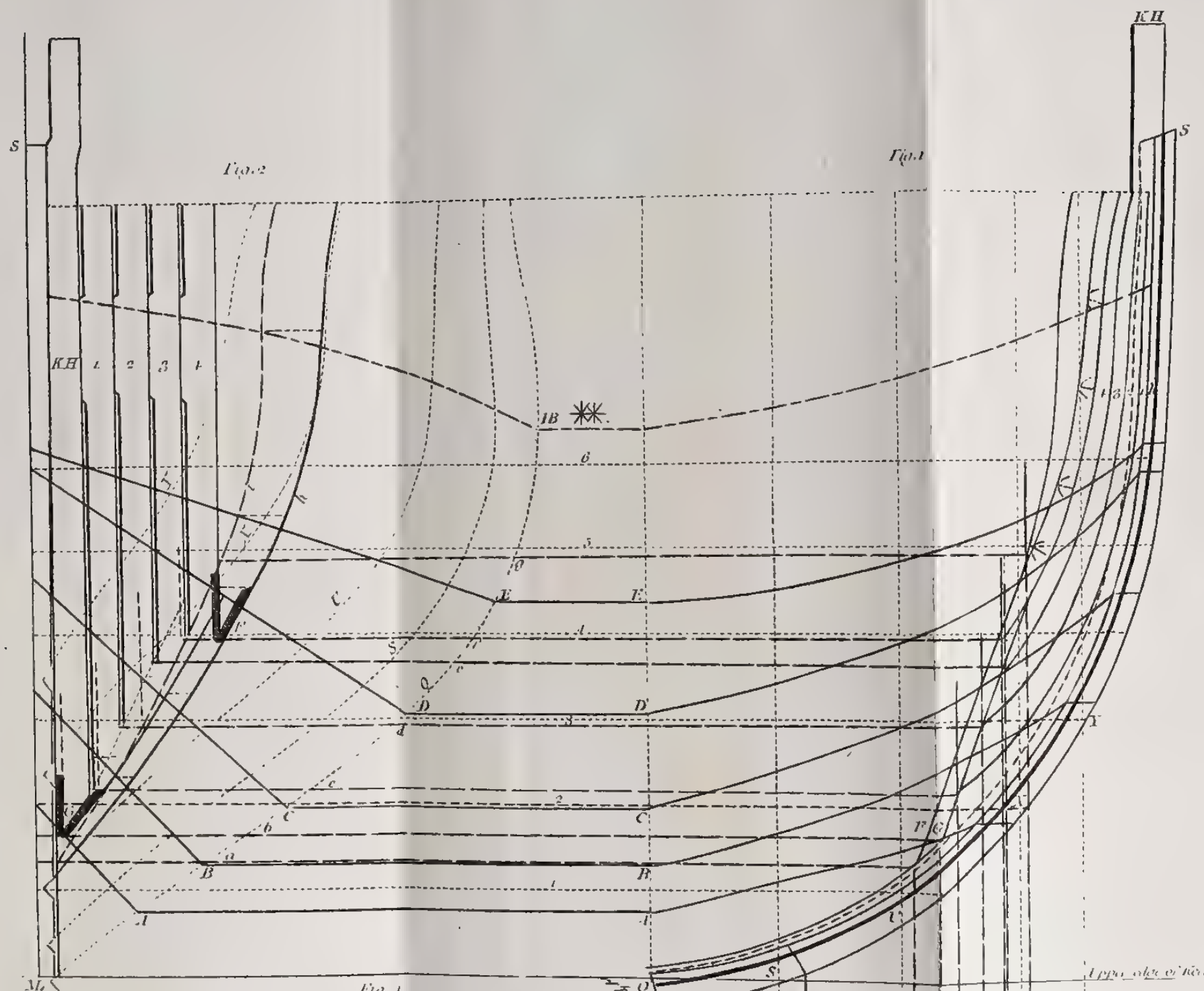
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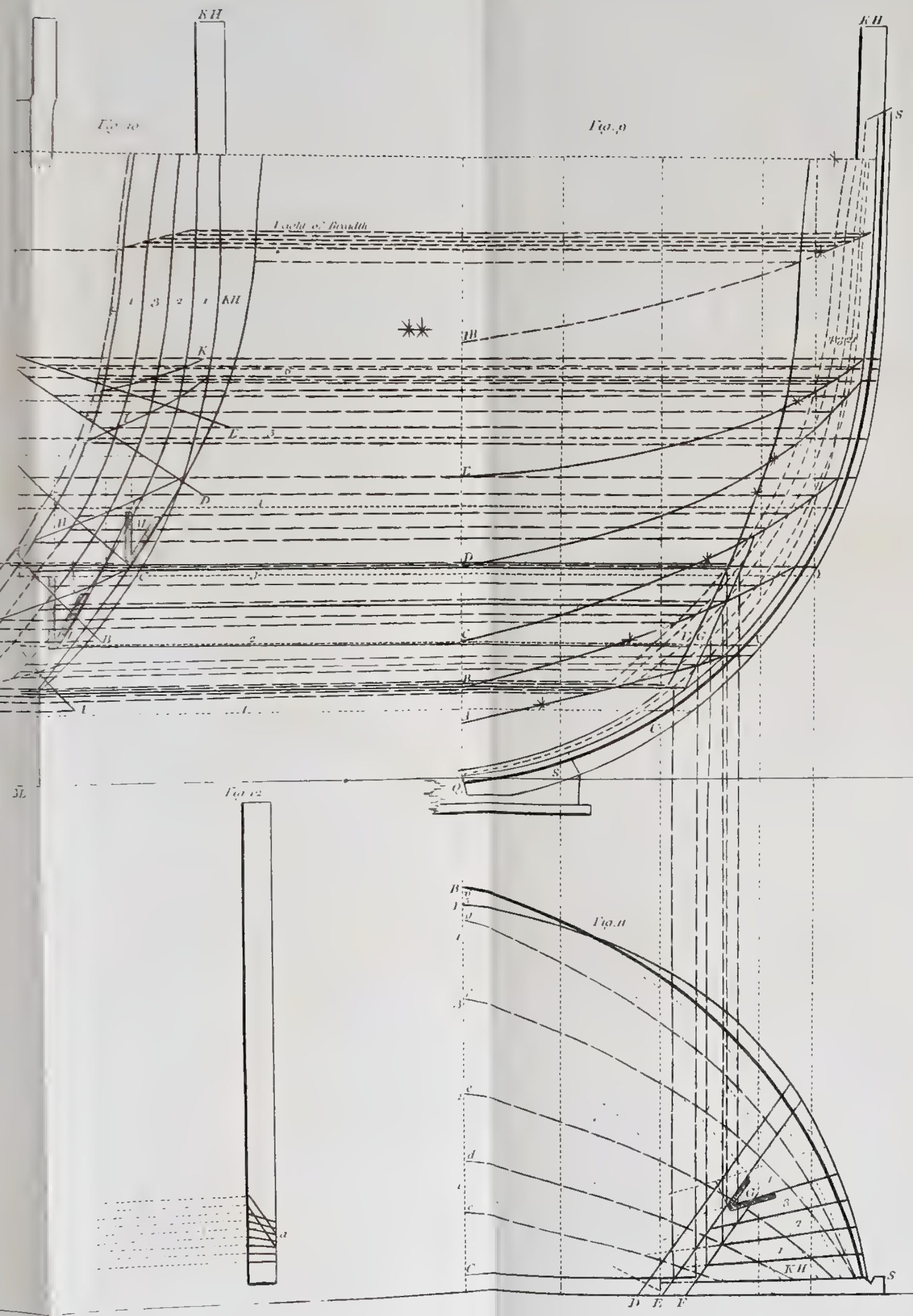
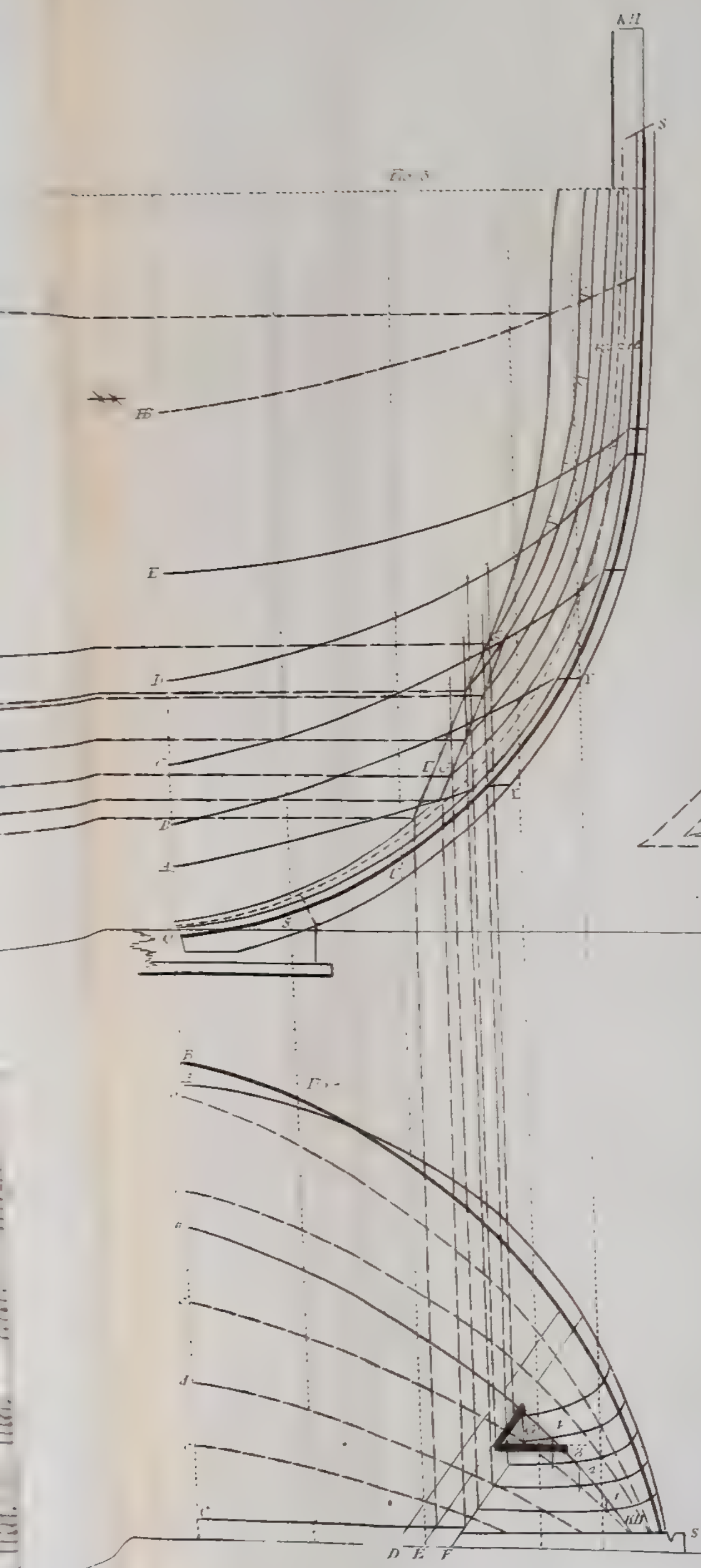
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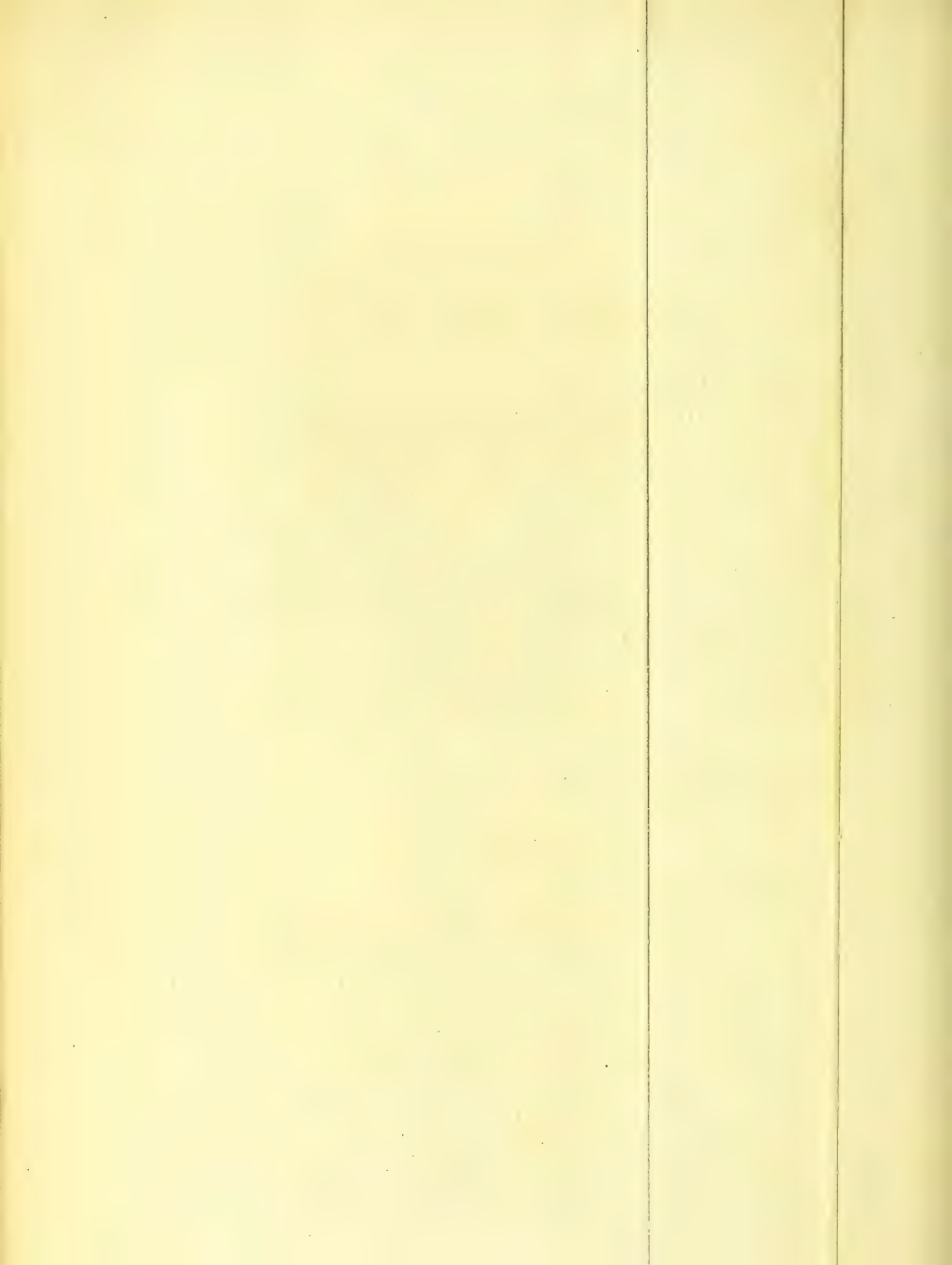
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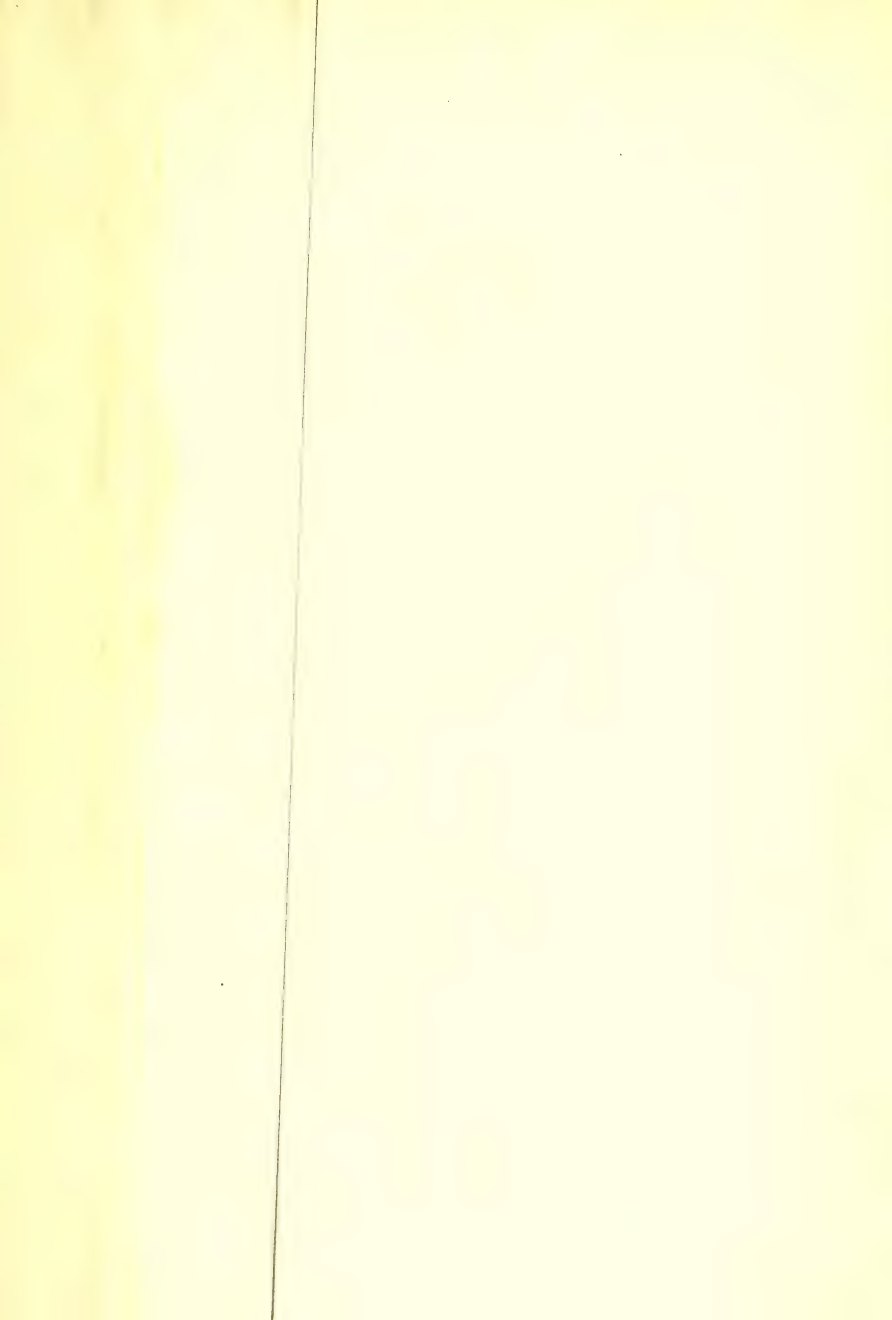


Fig. 2

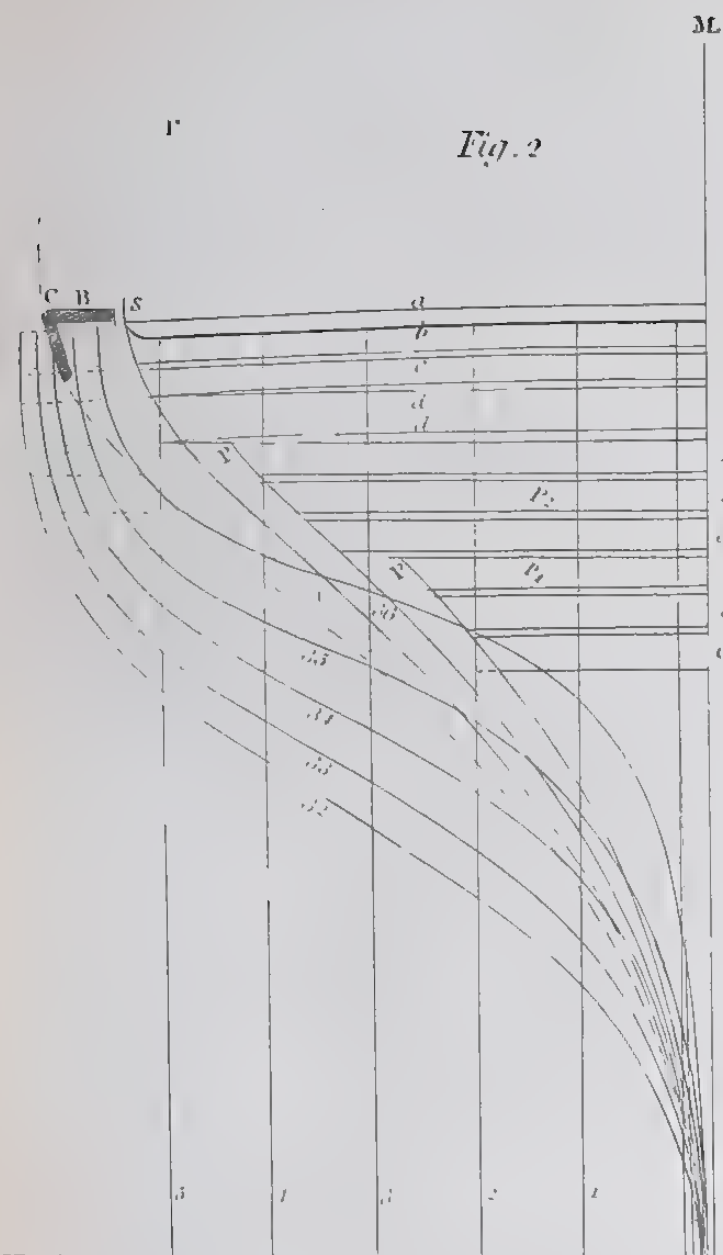


Fig. 1

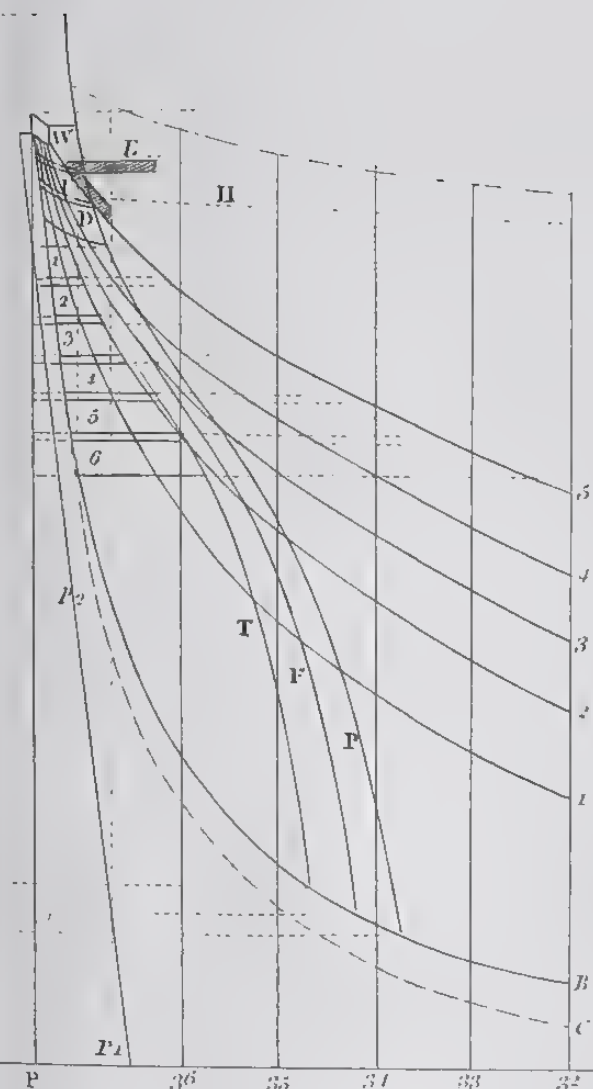


Fig. 5

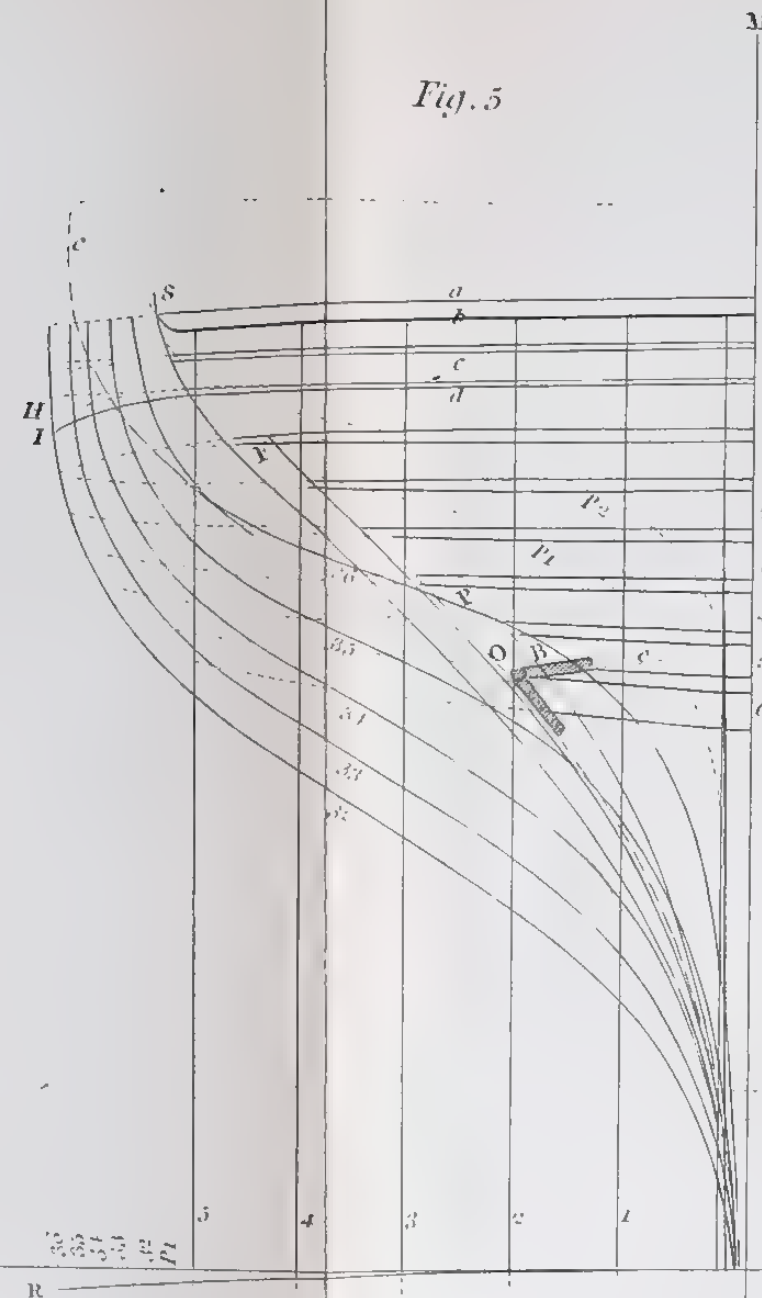


Fig. 4

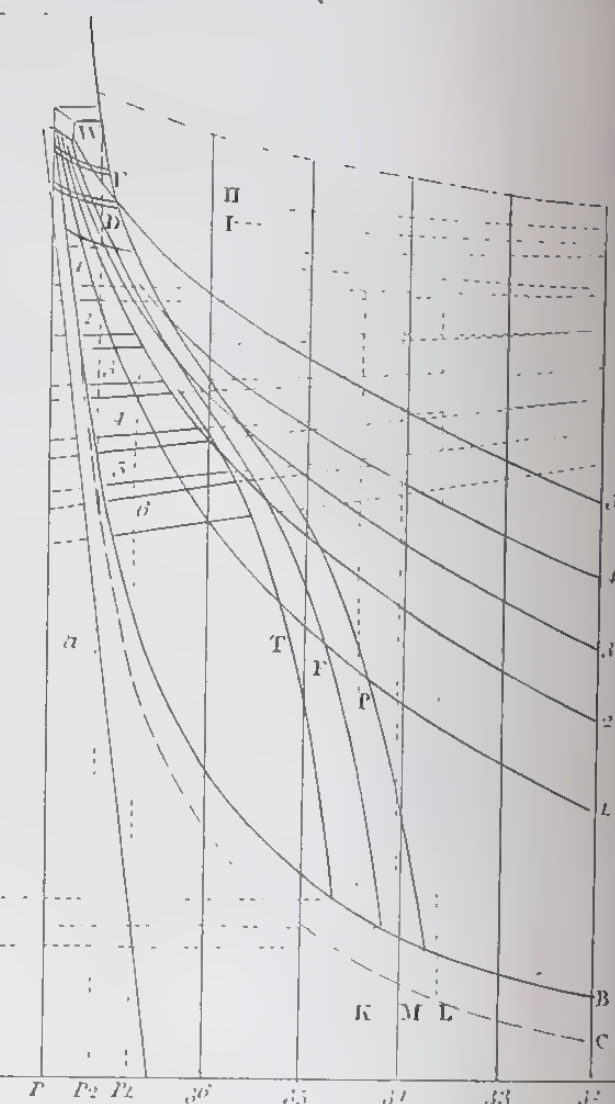


Fig. 3

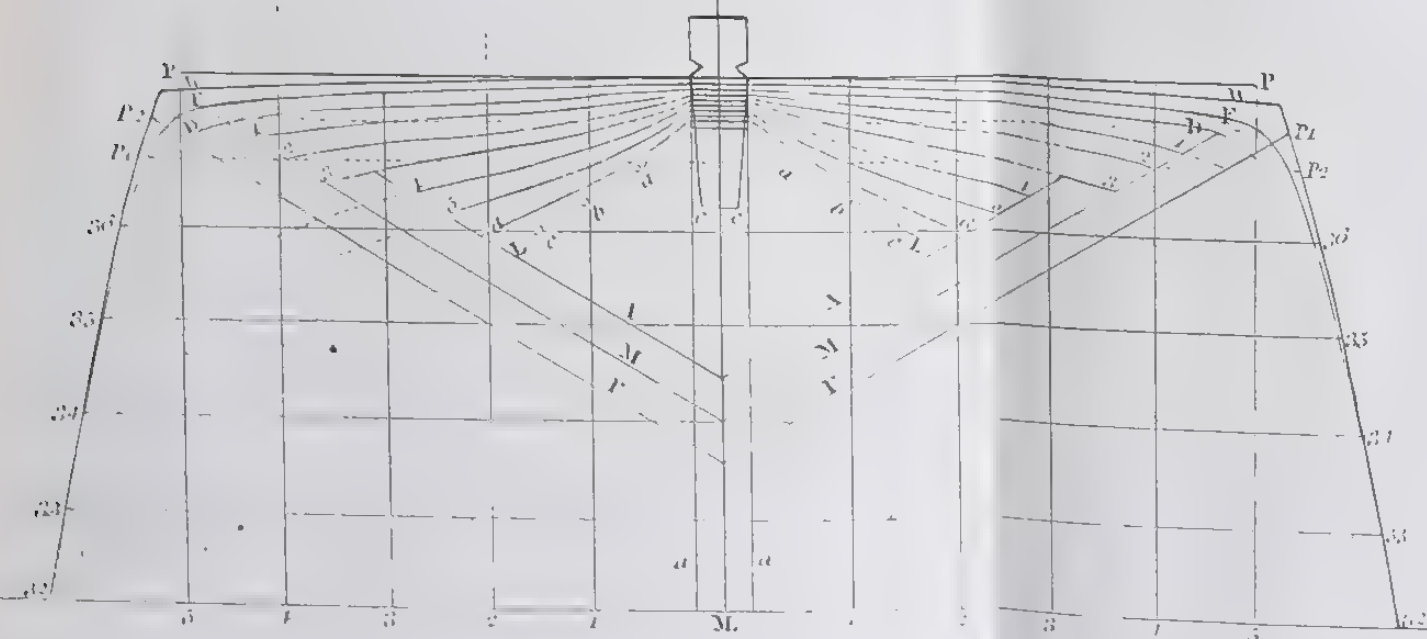


Fig. 6

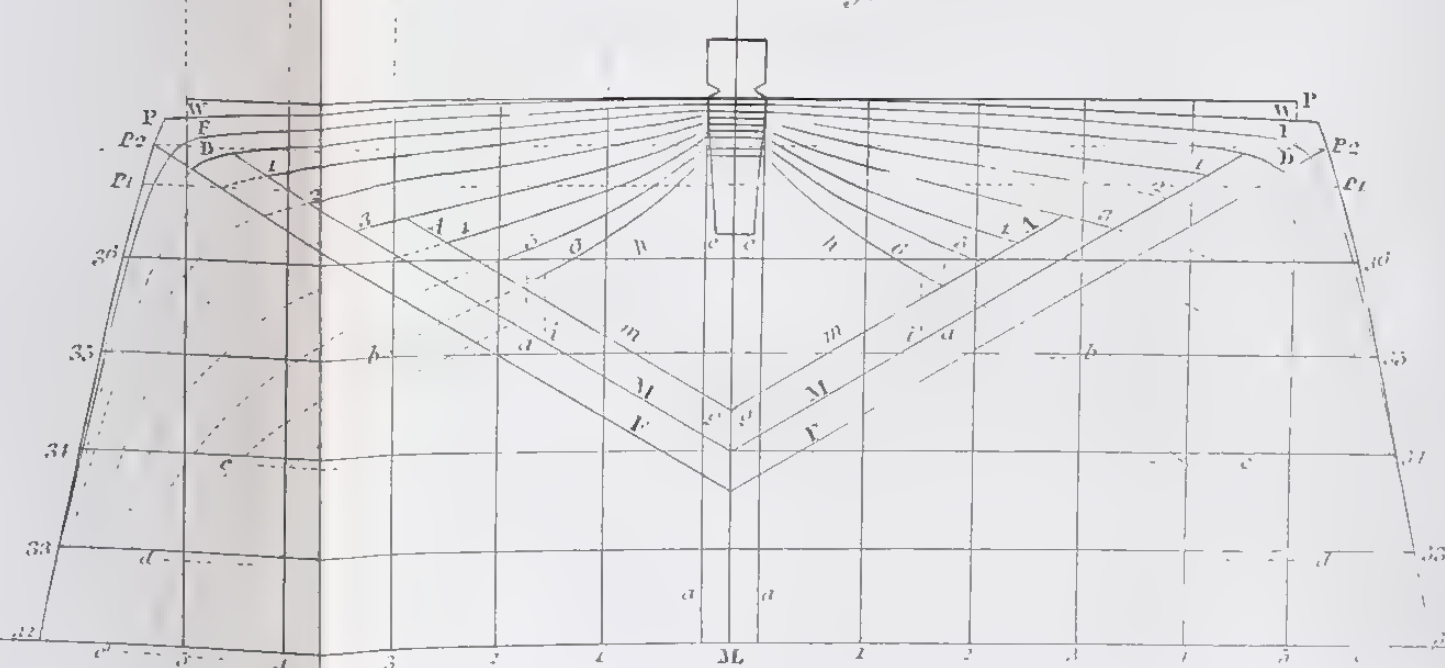


Fig. 8.

Fig. 7.

Fig. 11.

Fig. 10.

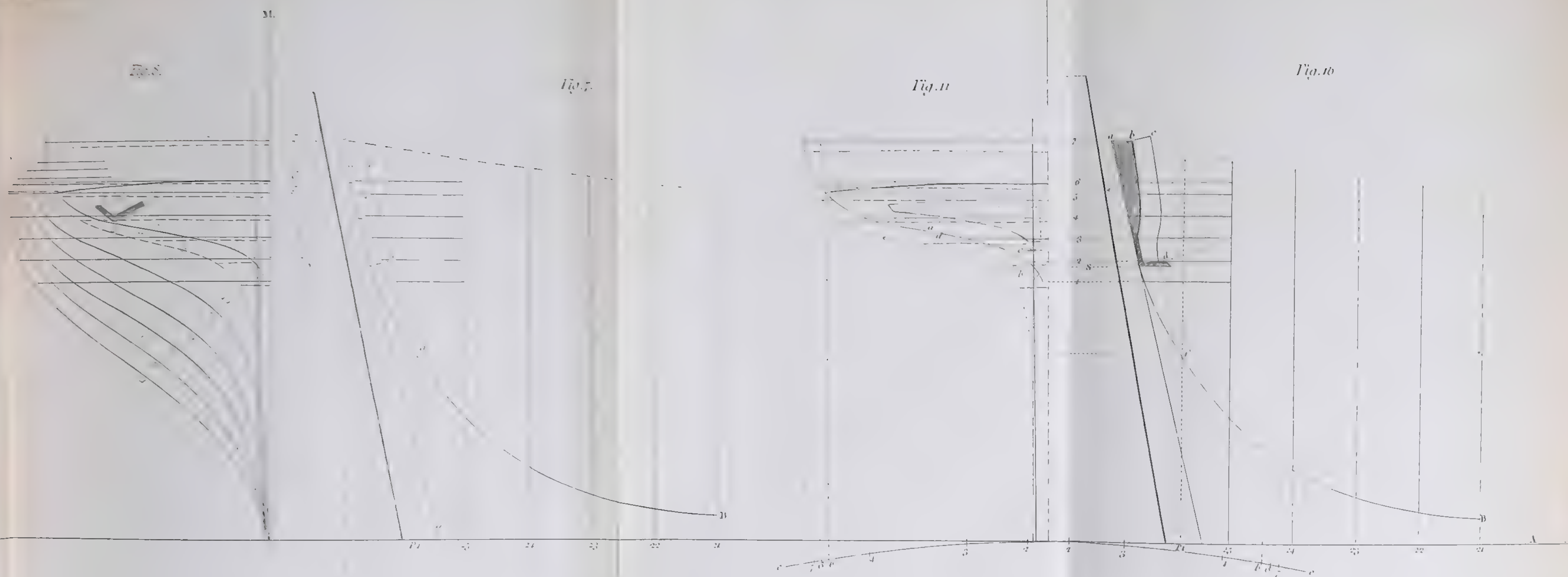
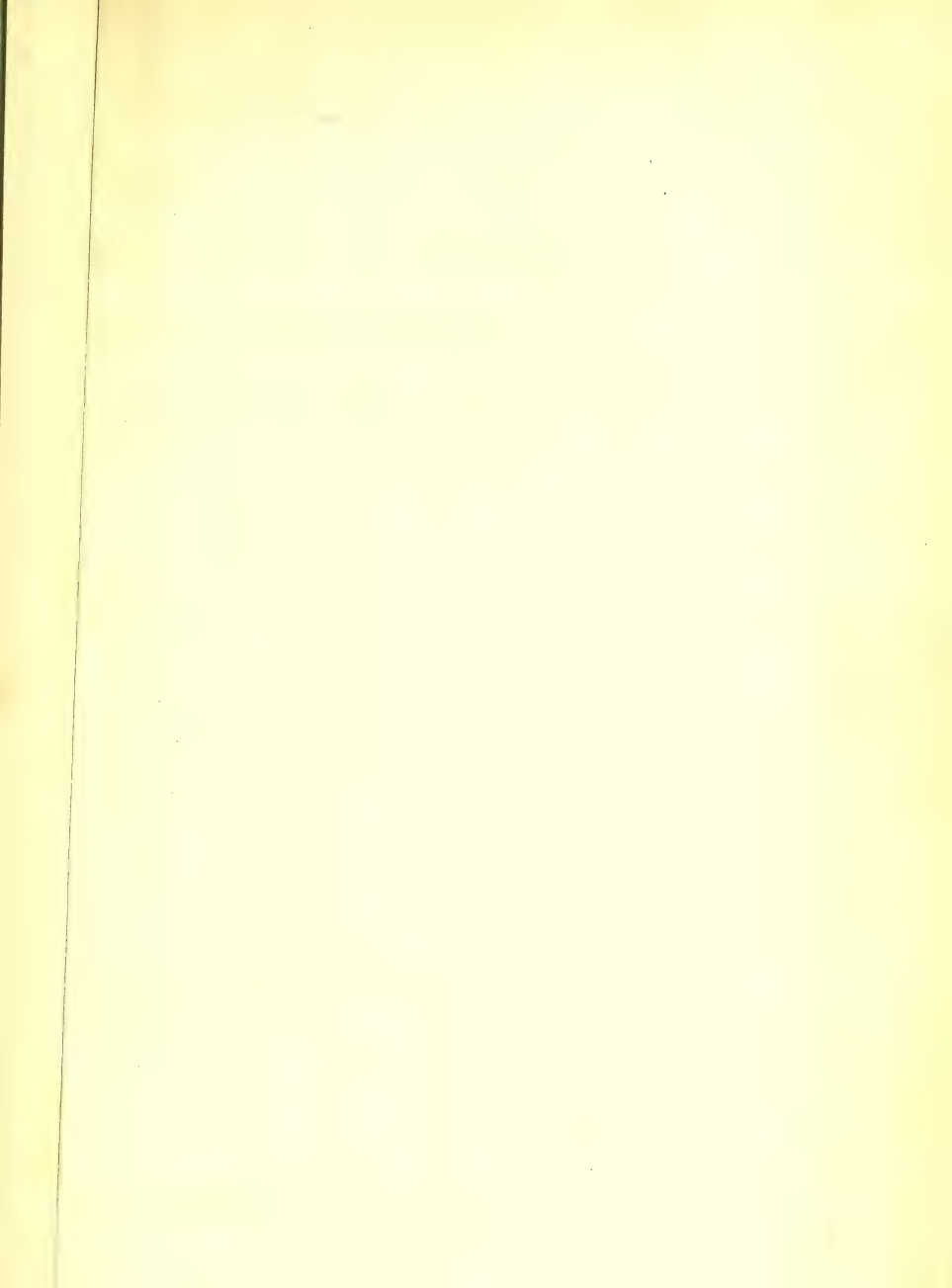


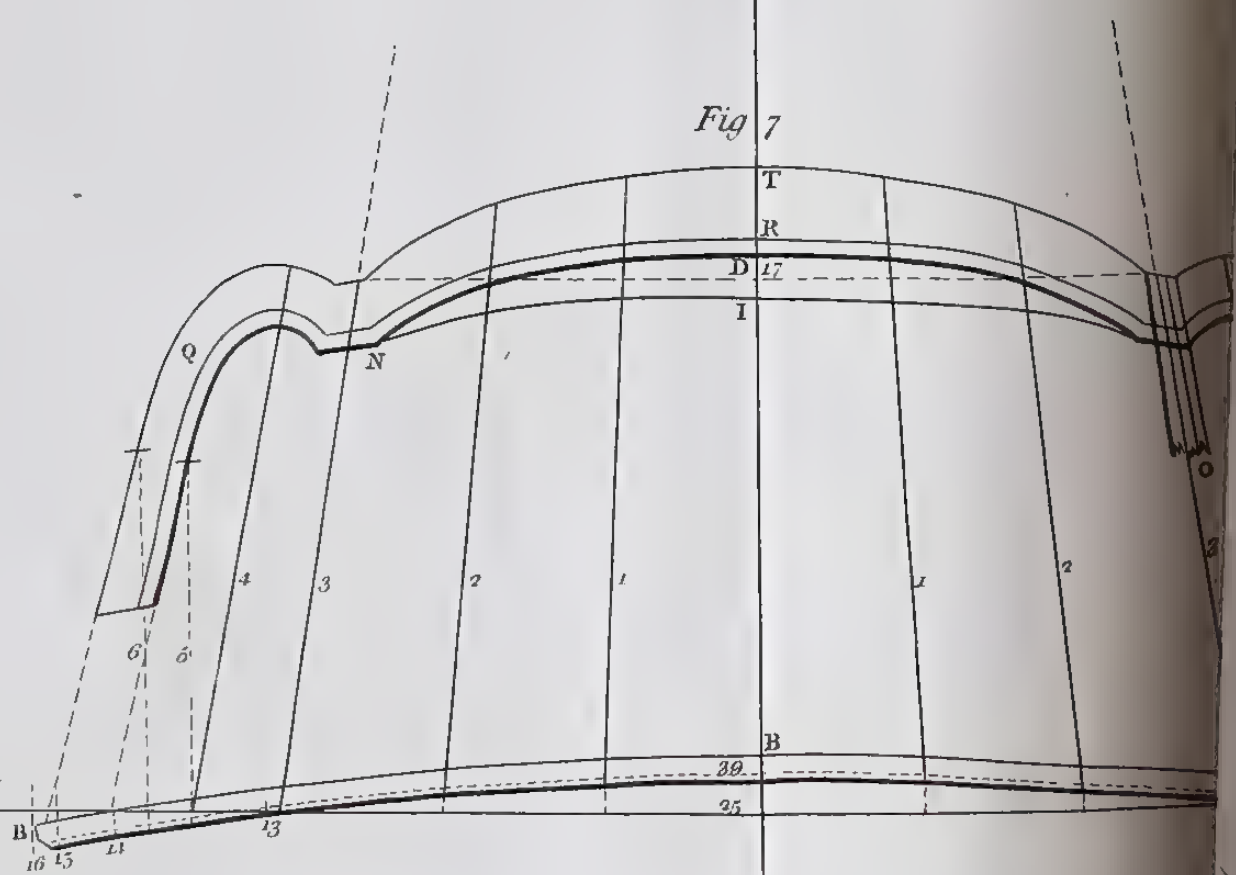
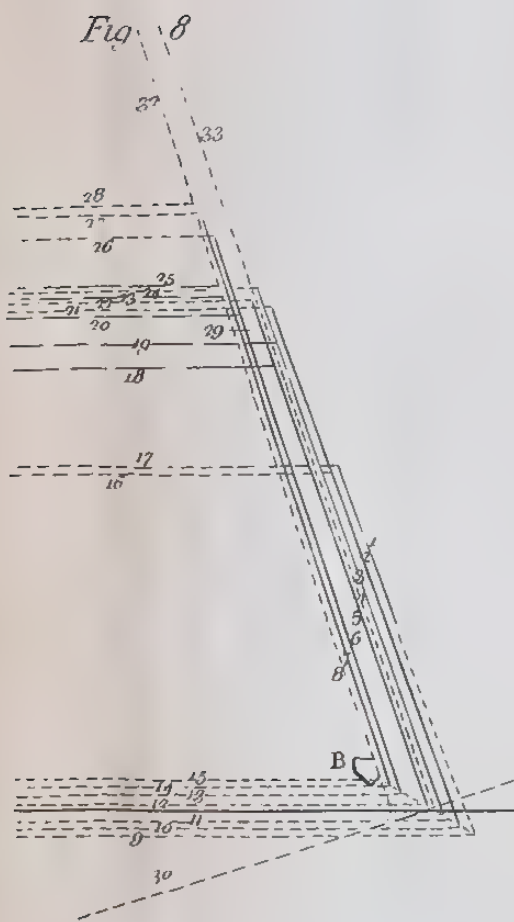
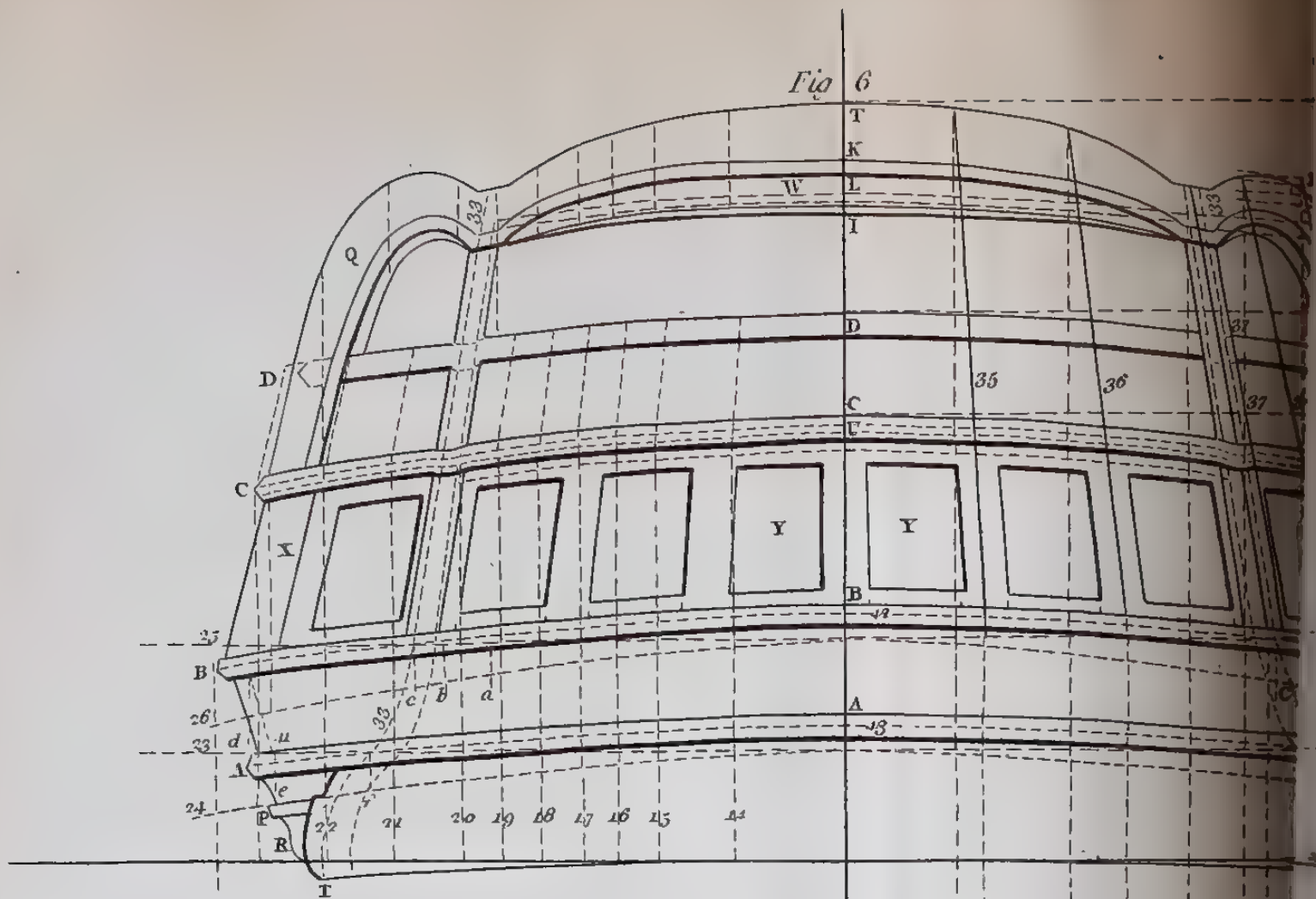
Fig. 9.

Fig. 12.







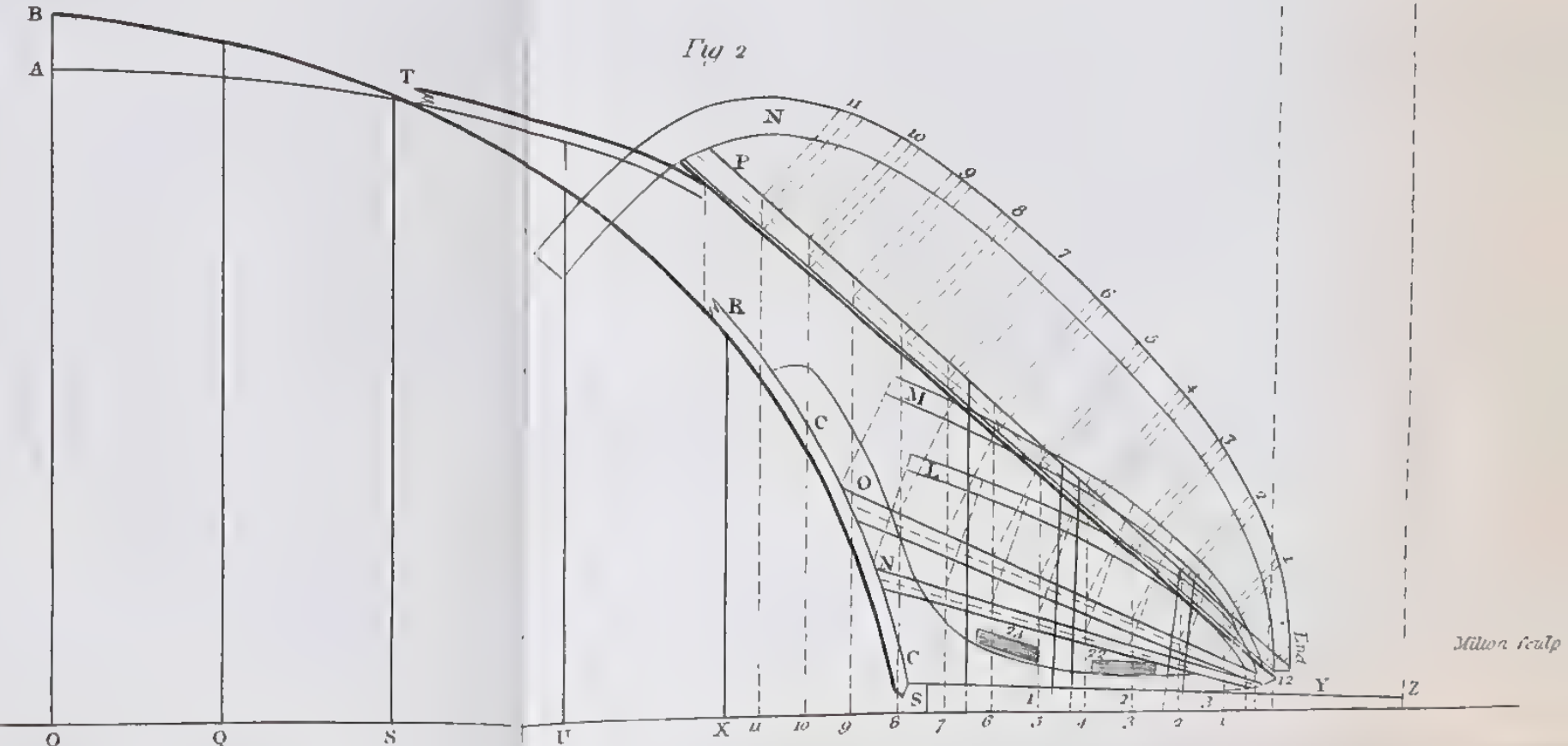
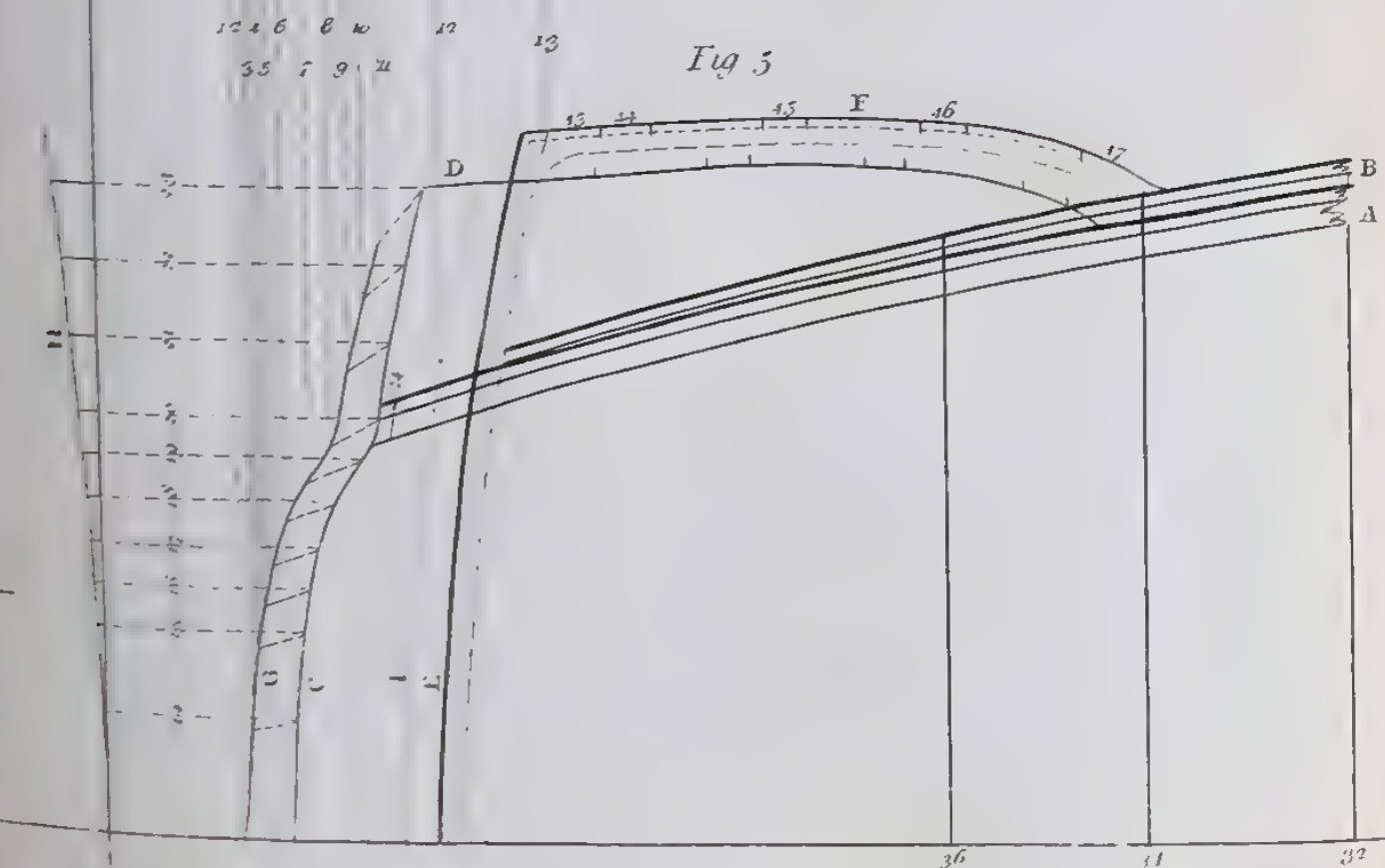
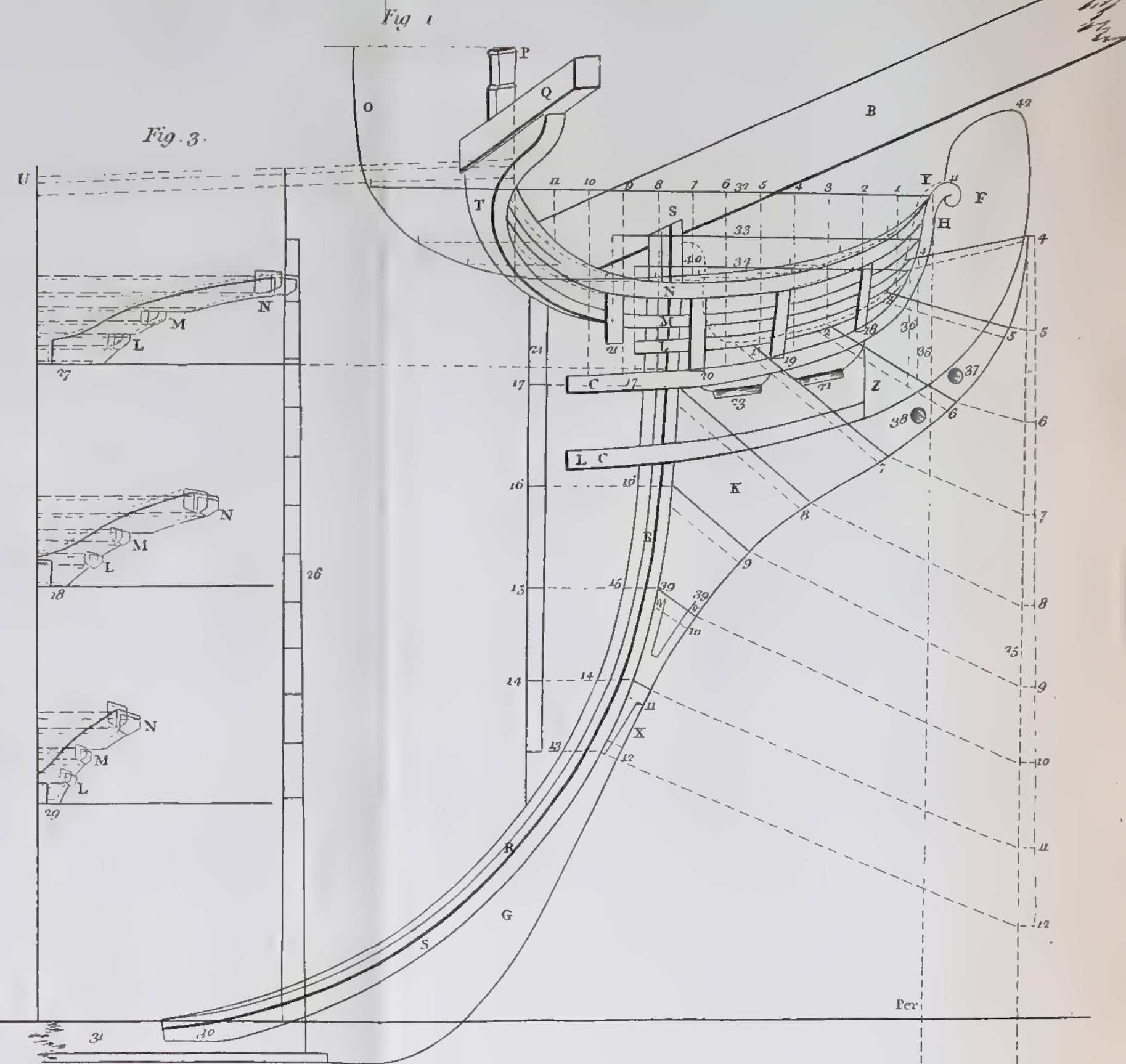
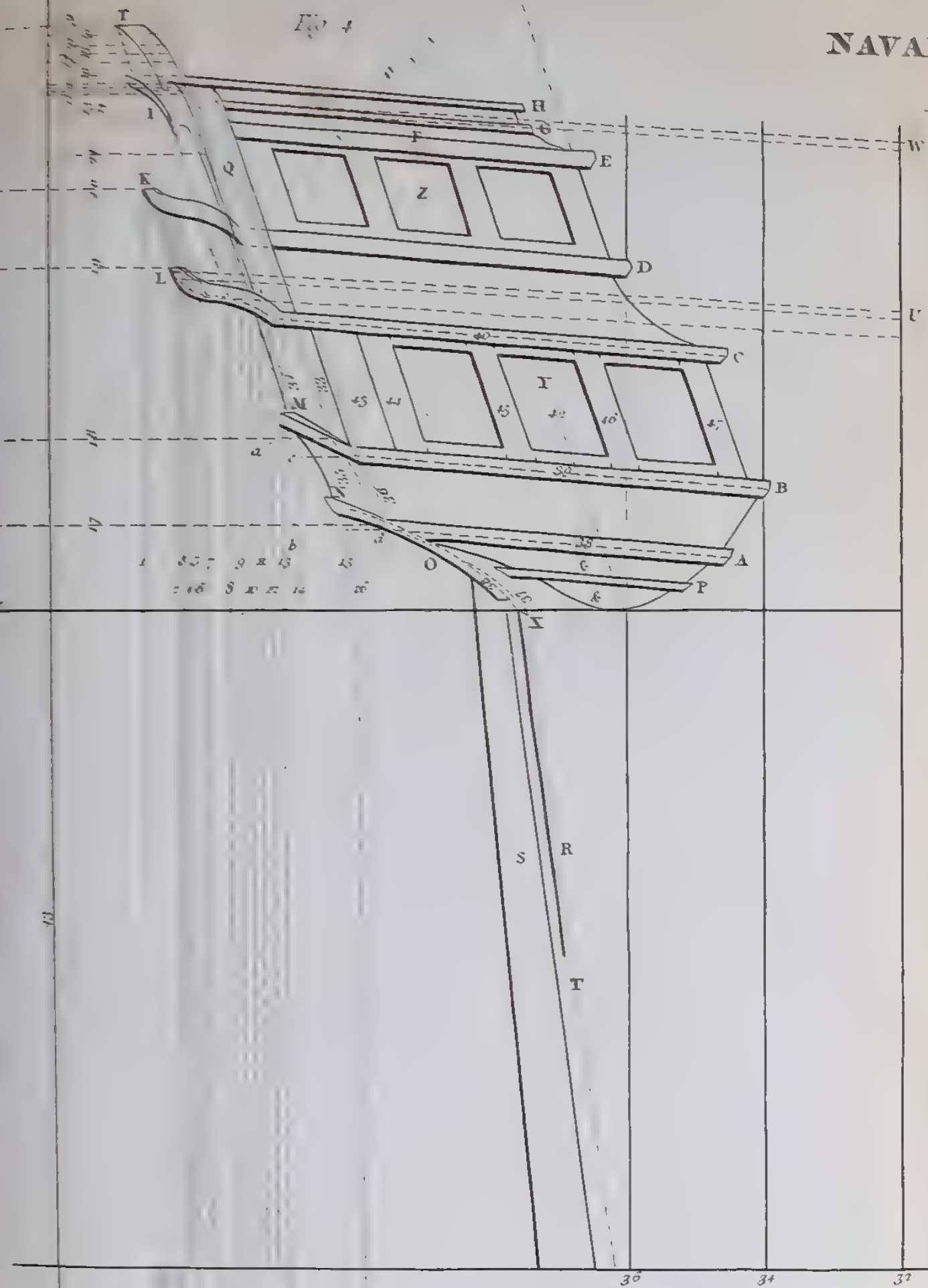


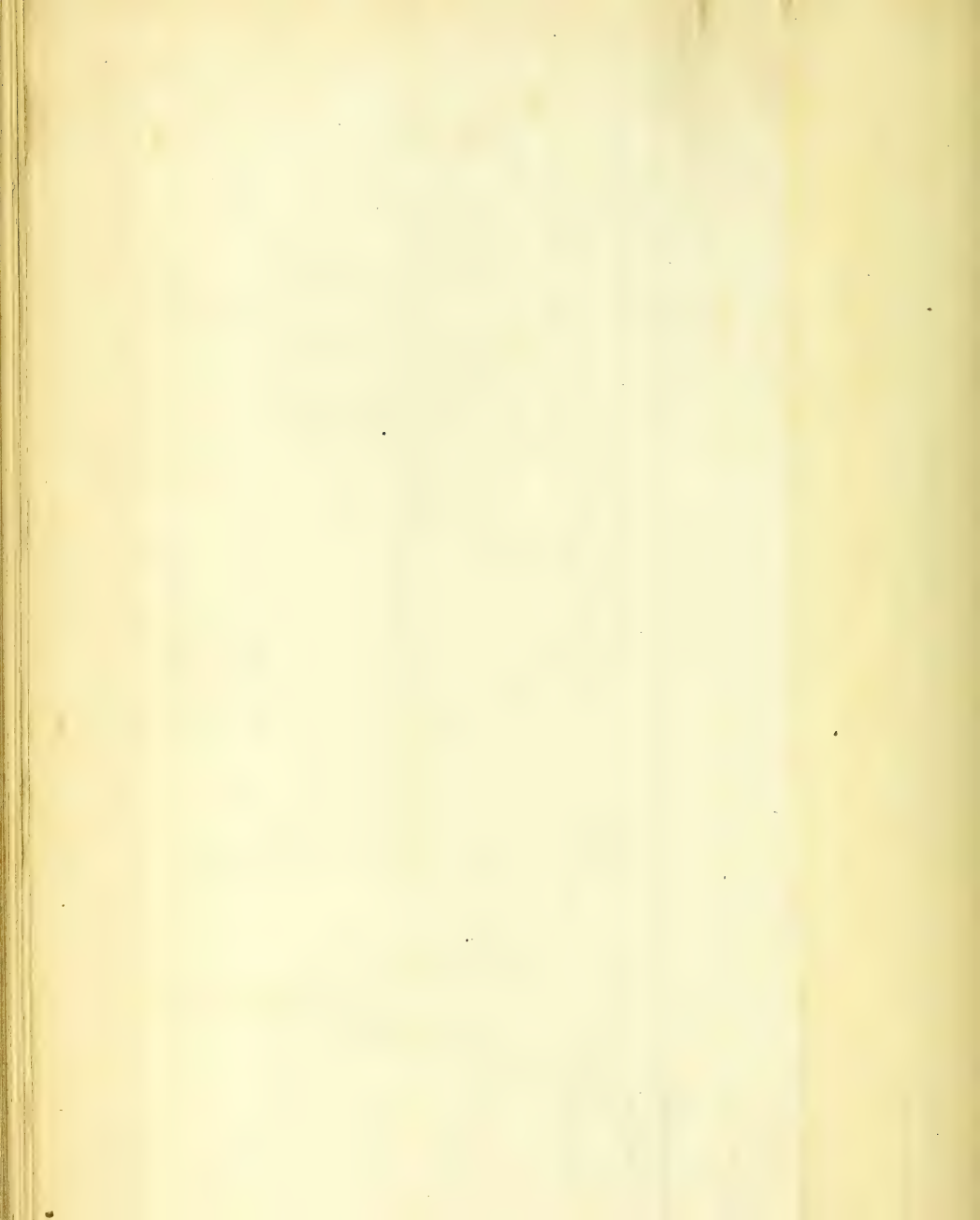
Glover del

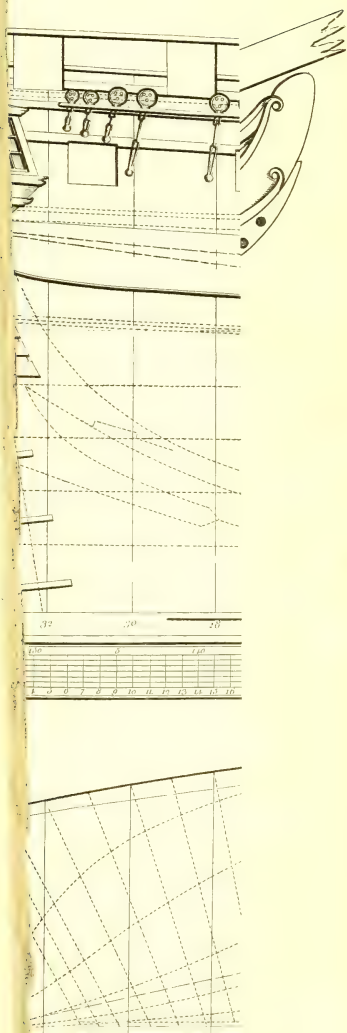
NAVAL ARCHITECTURE.

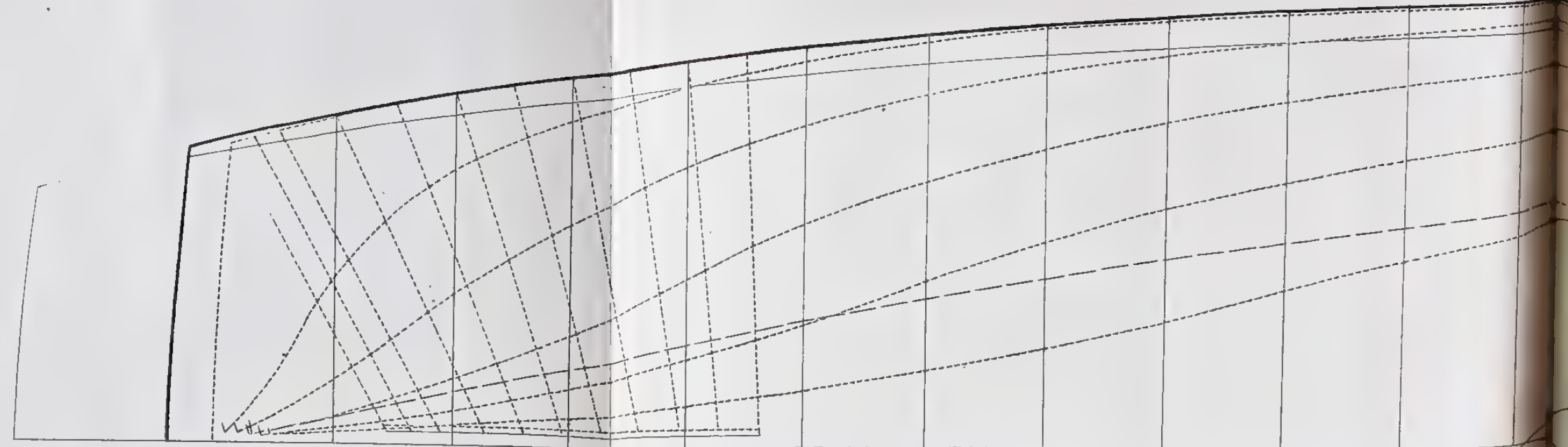
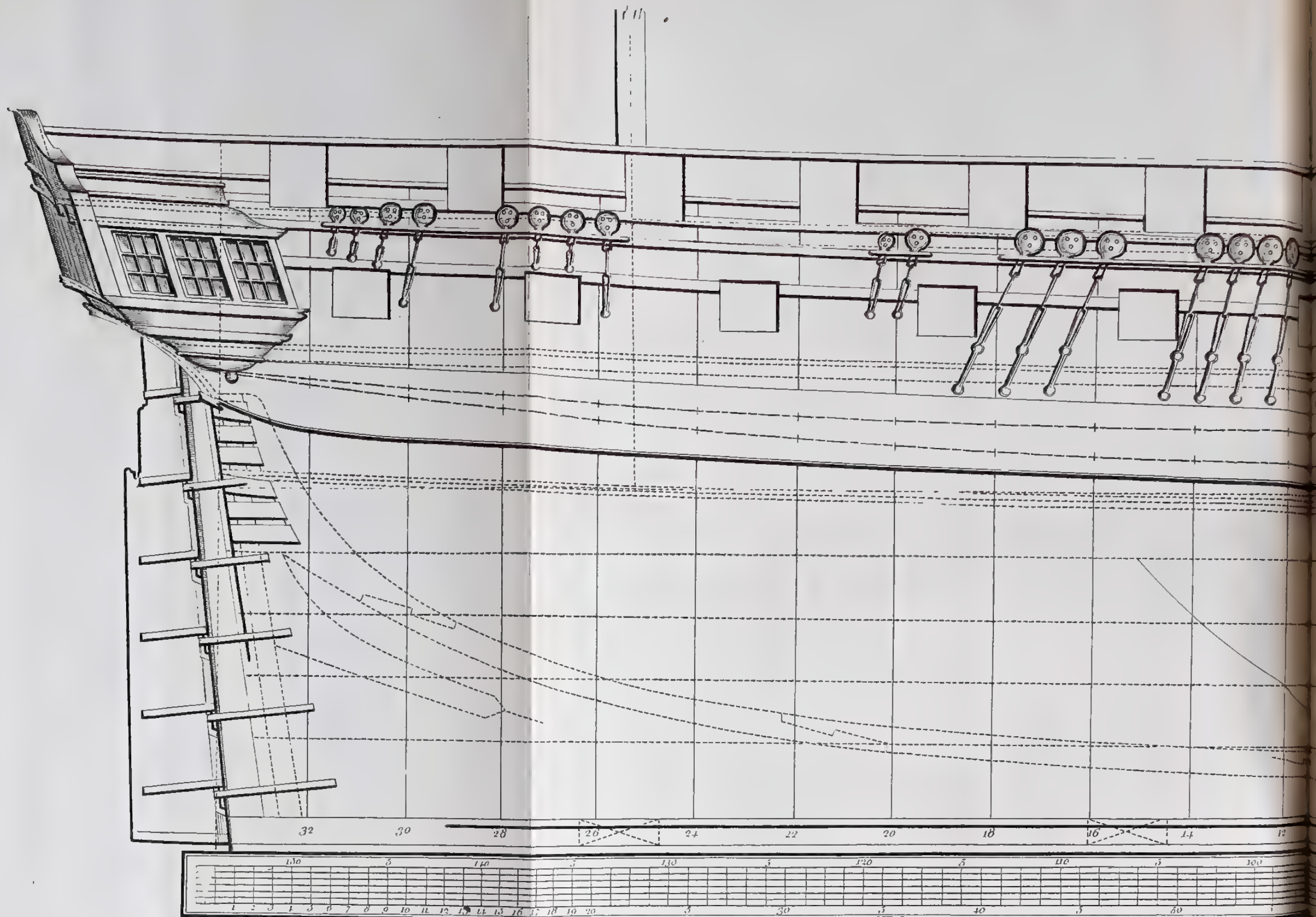
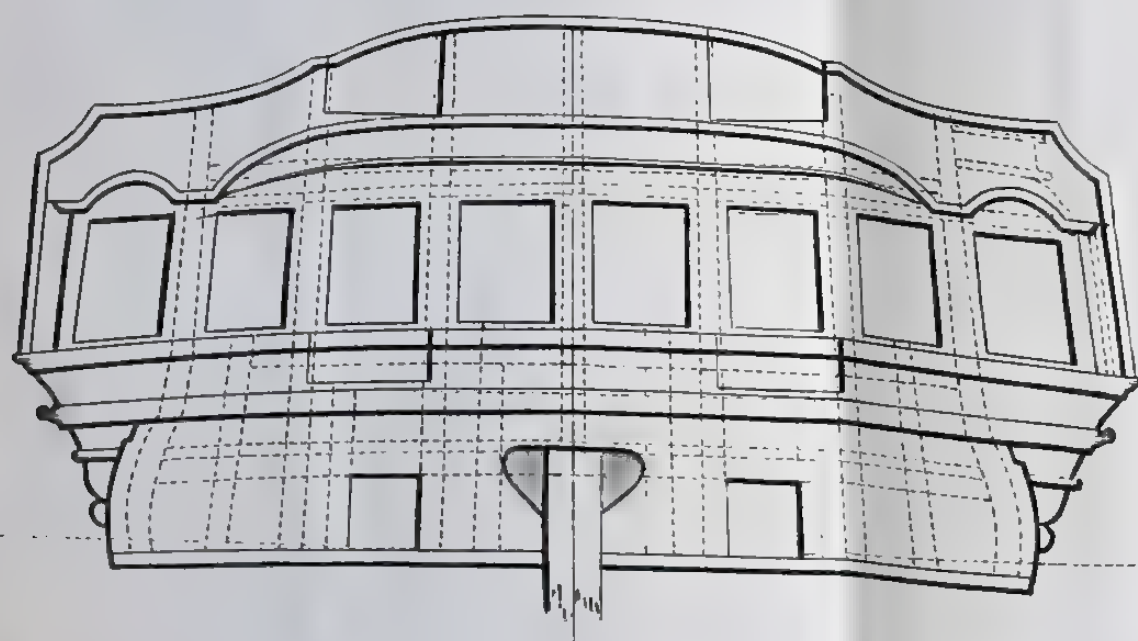
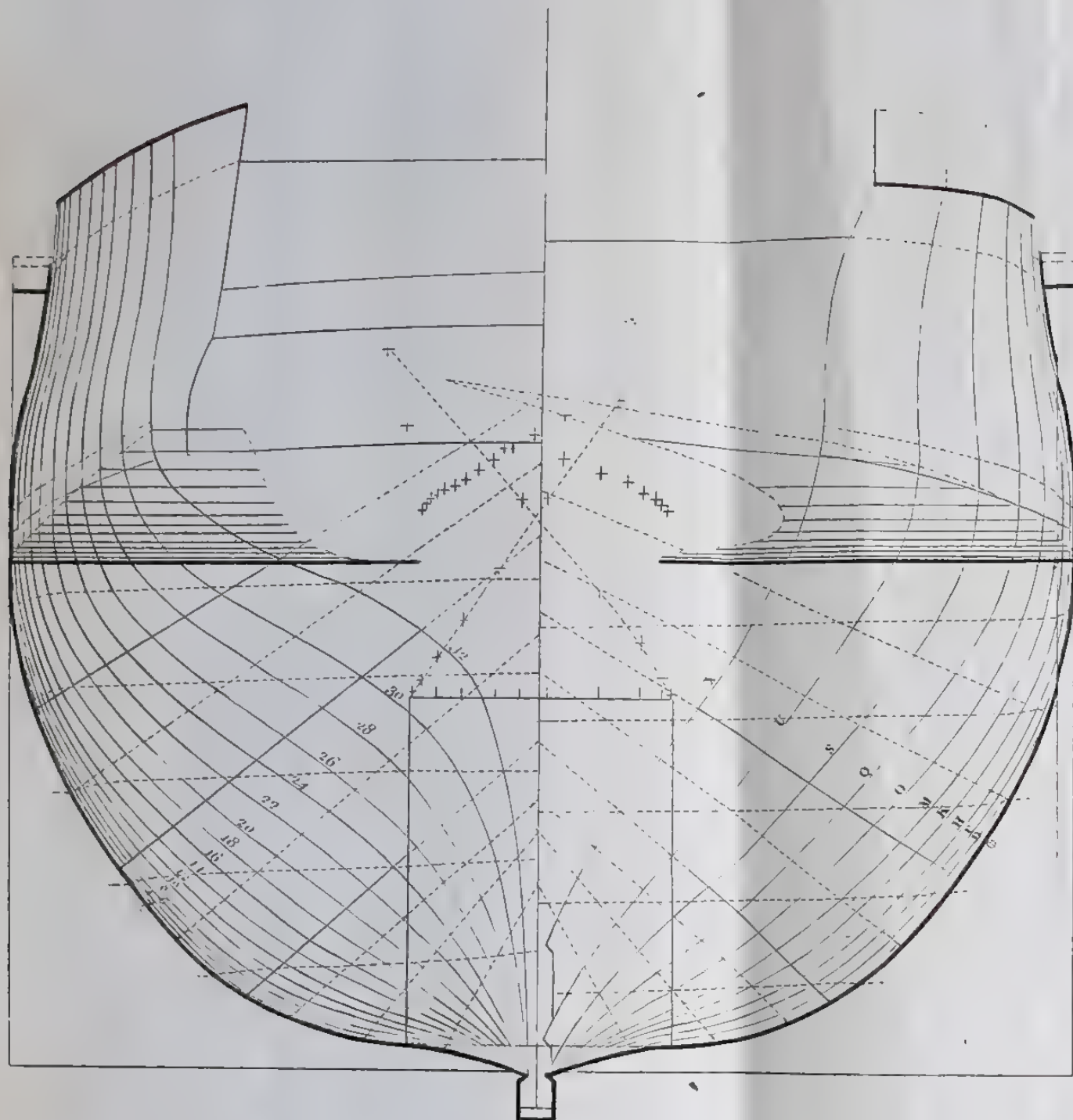
A SHIP OF 74 GUNS.

PLATE X
Laying off D



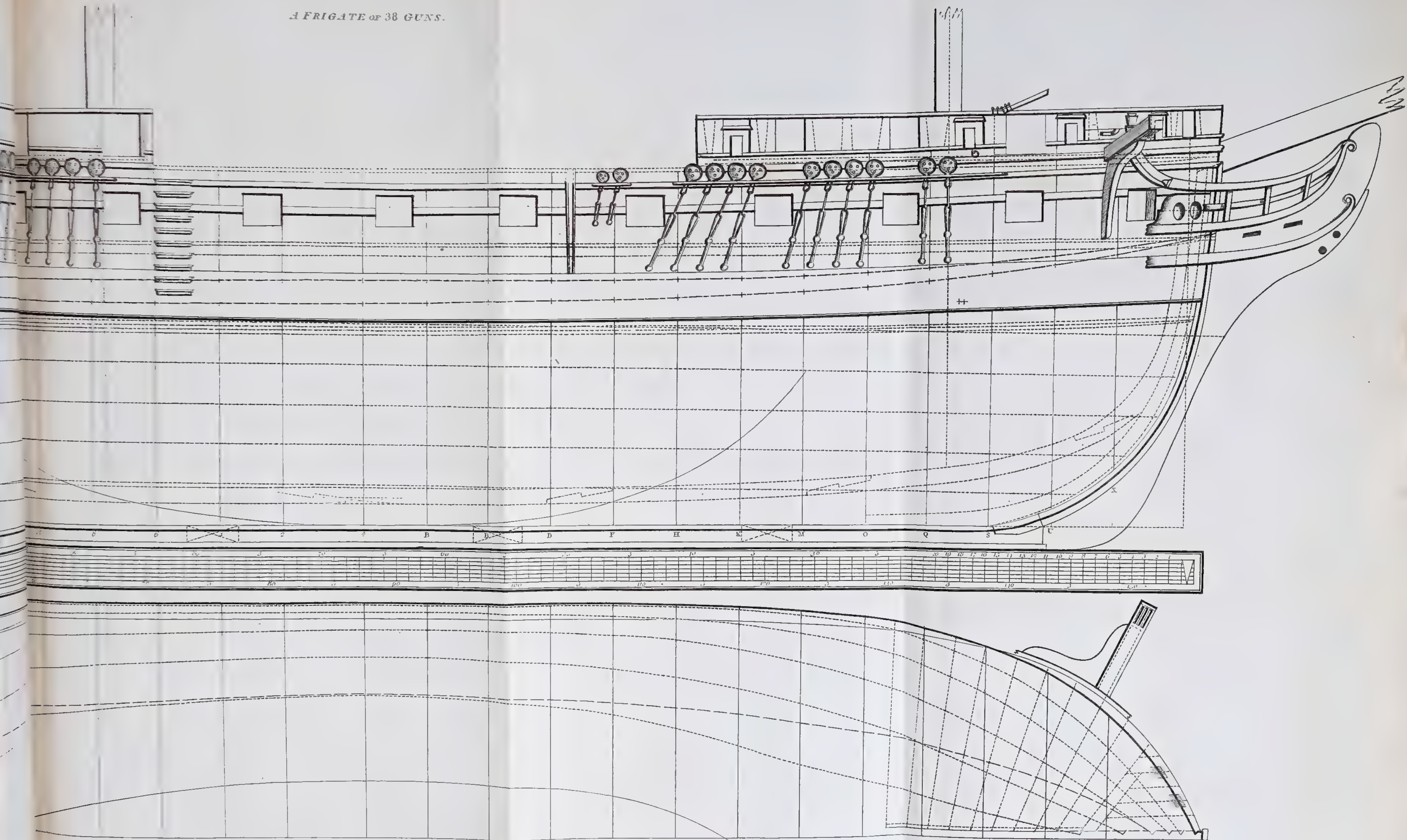


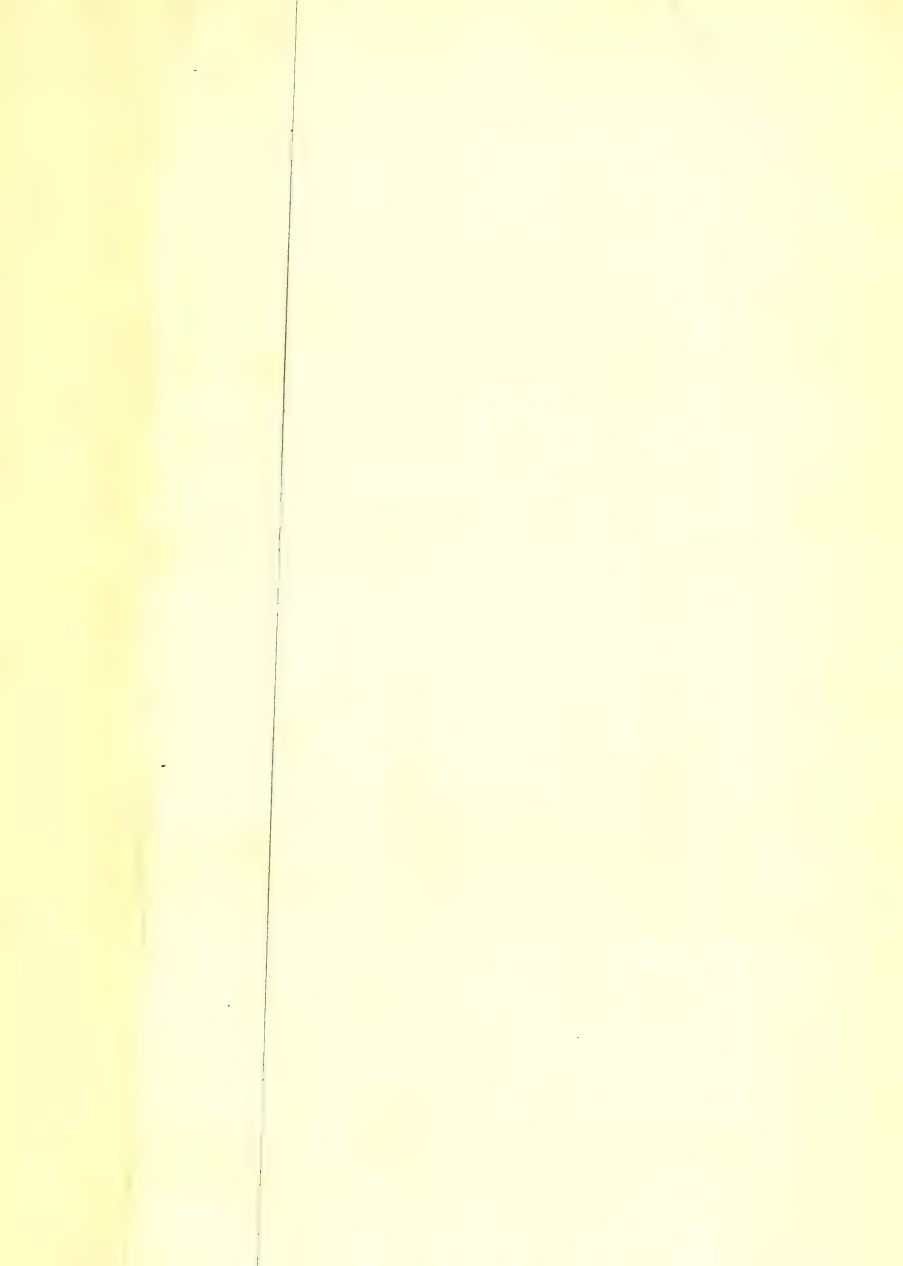


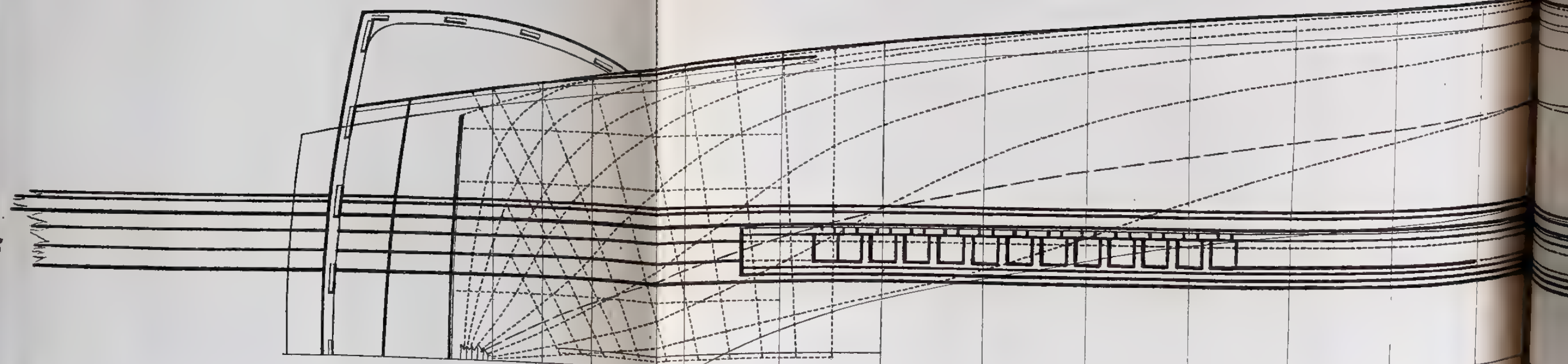
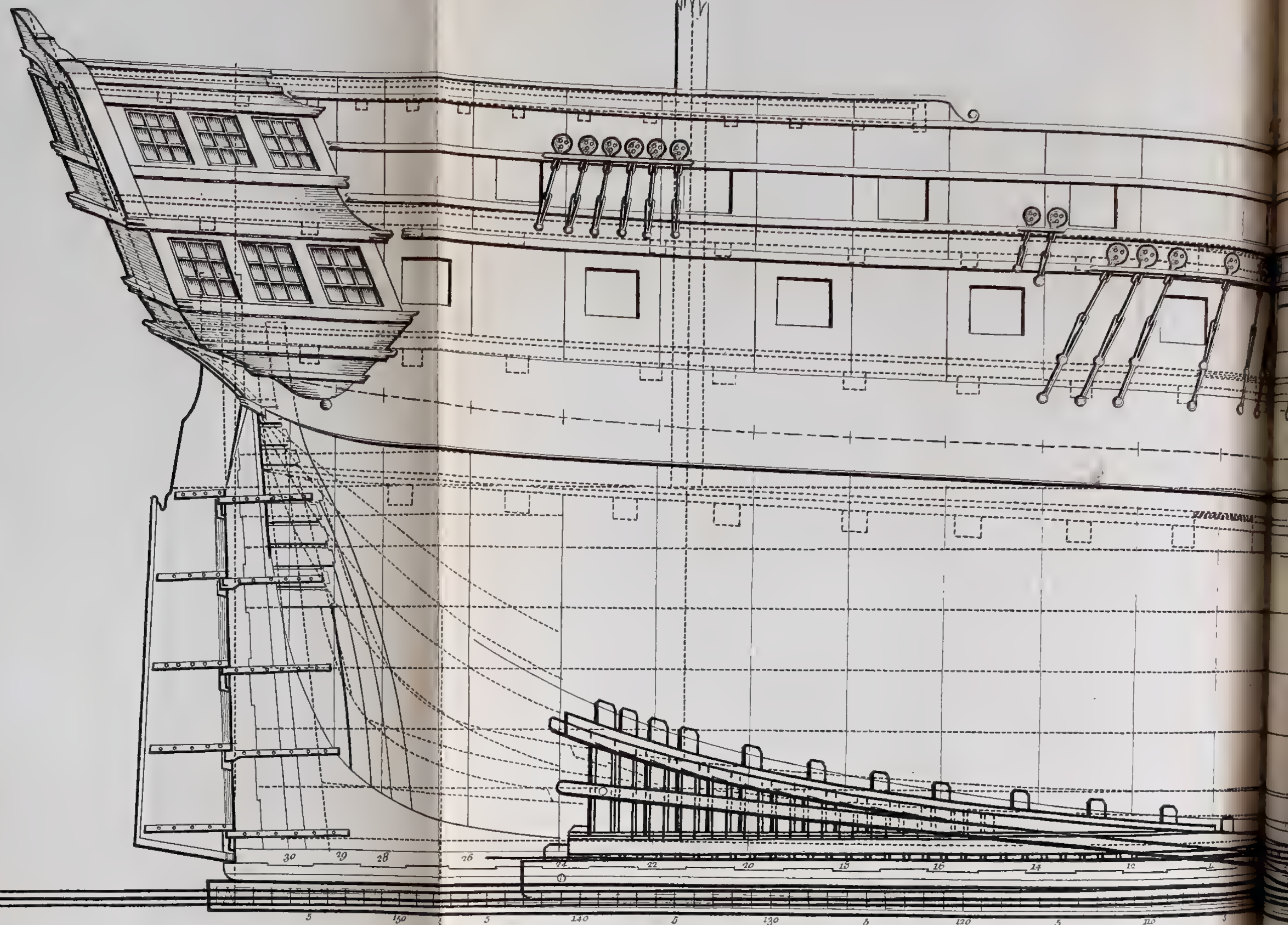
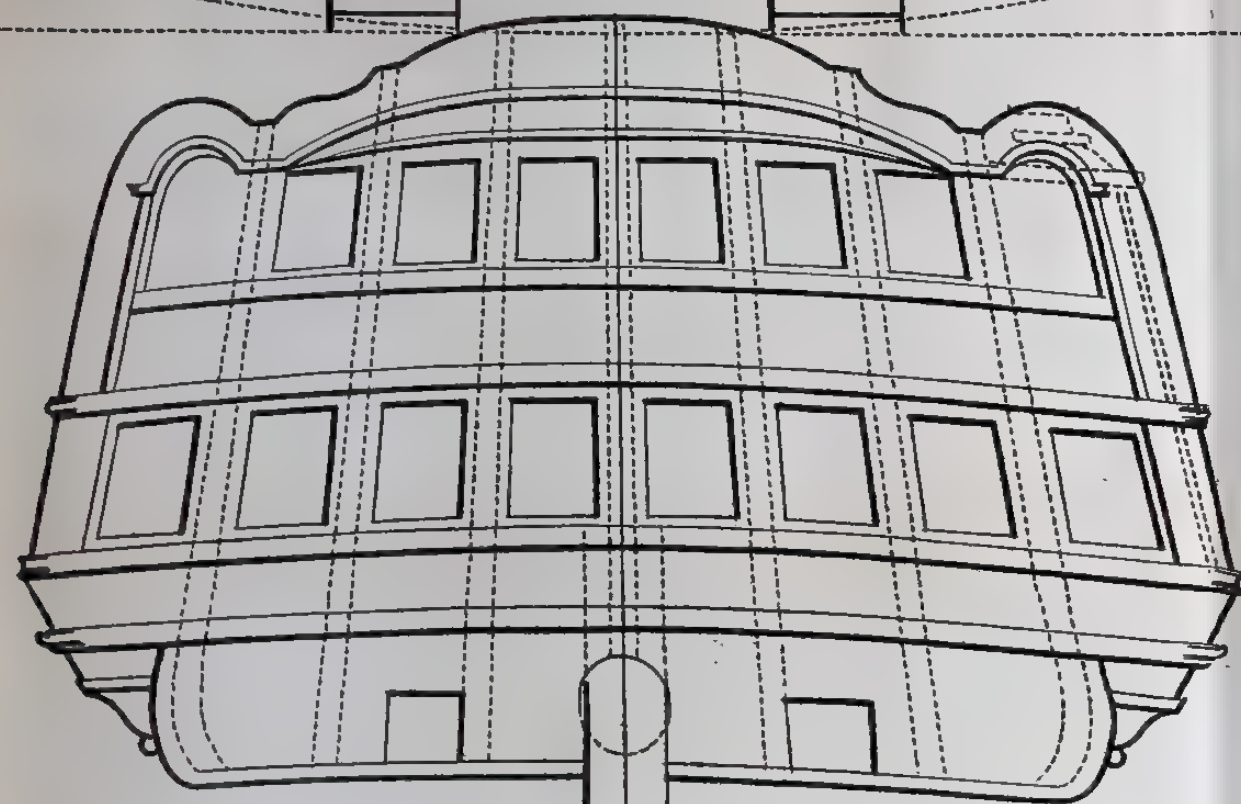
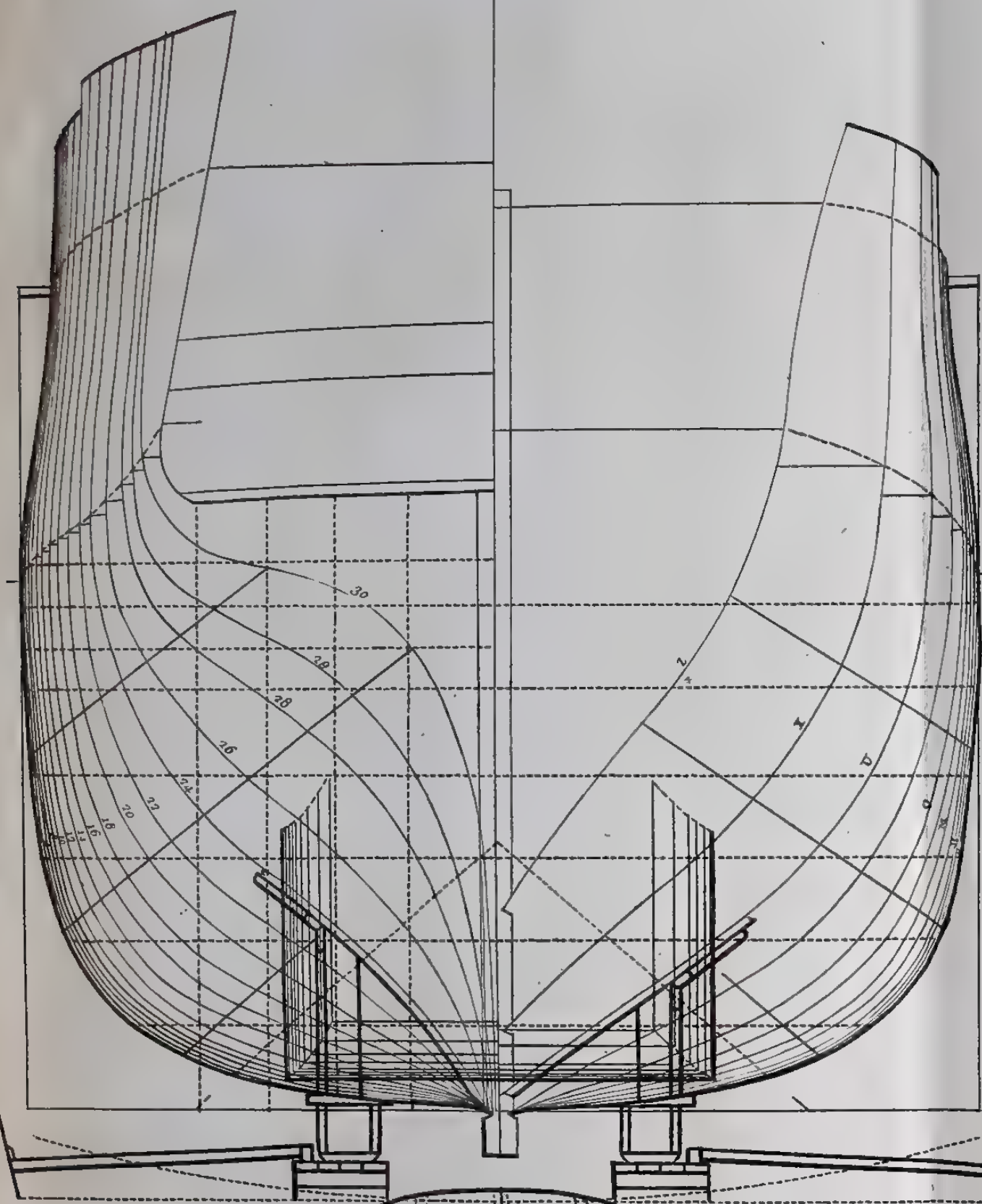


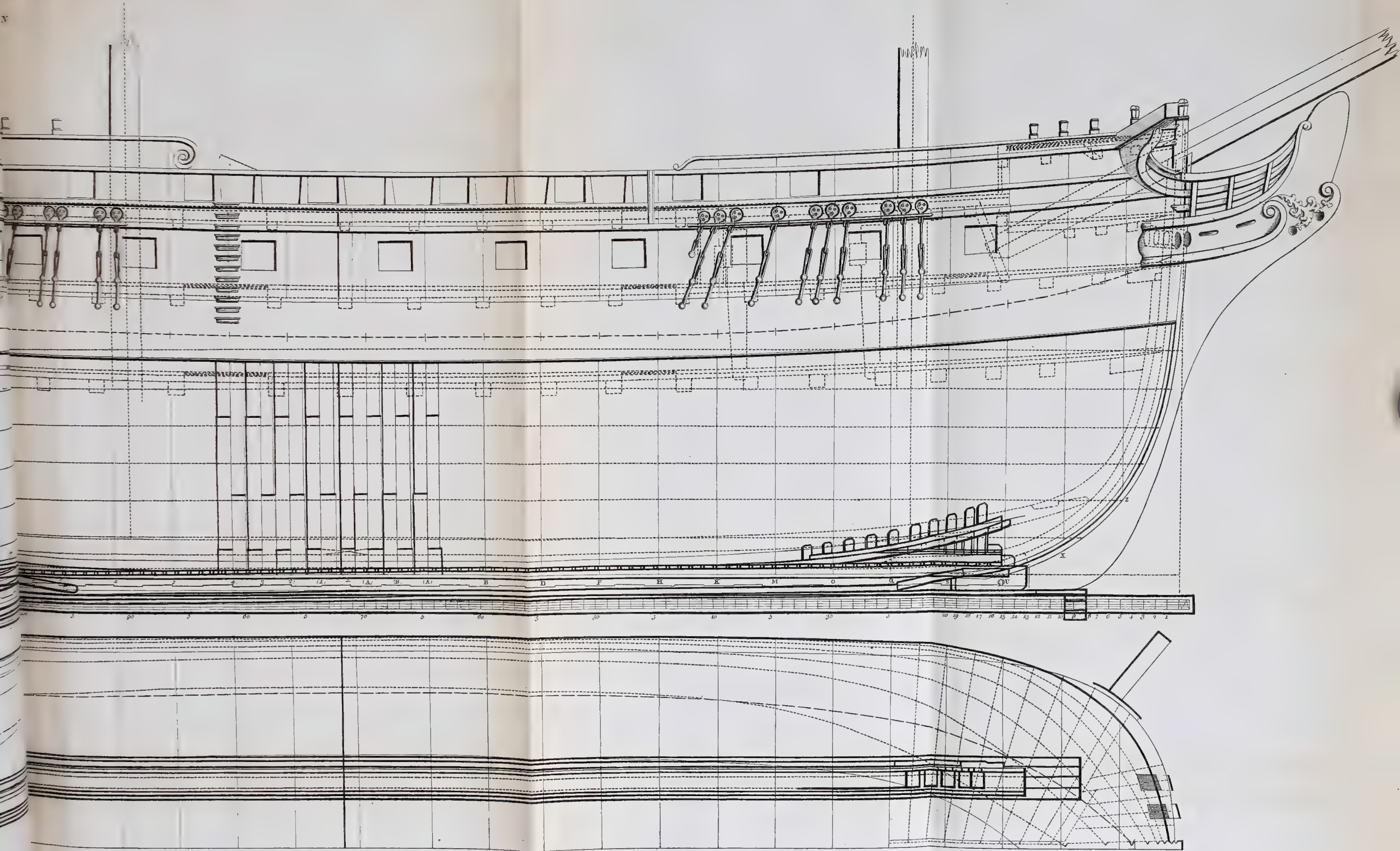
NAVAL ARCHITECTURE.

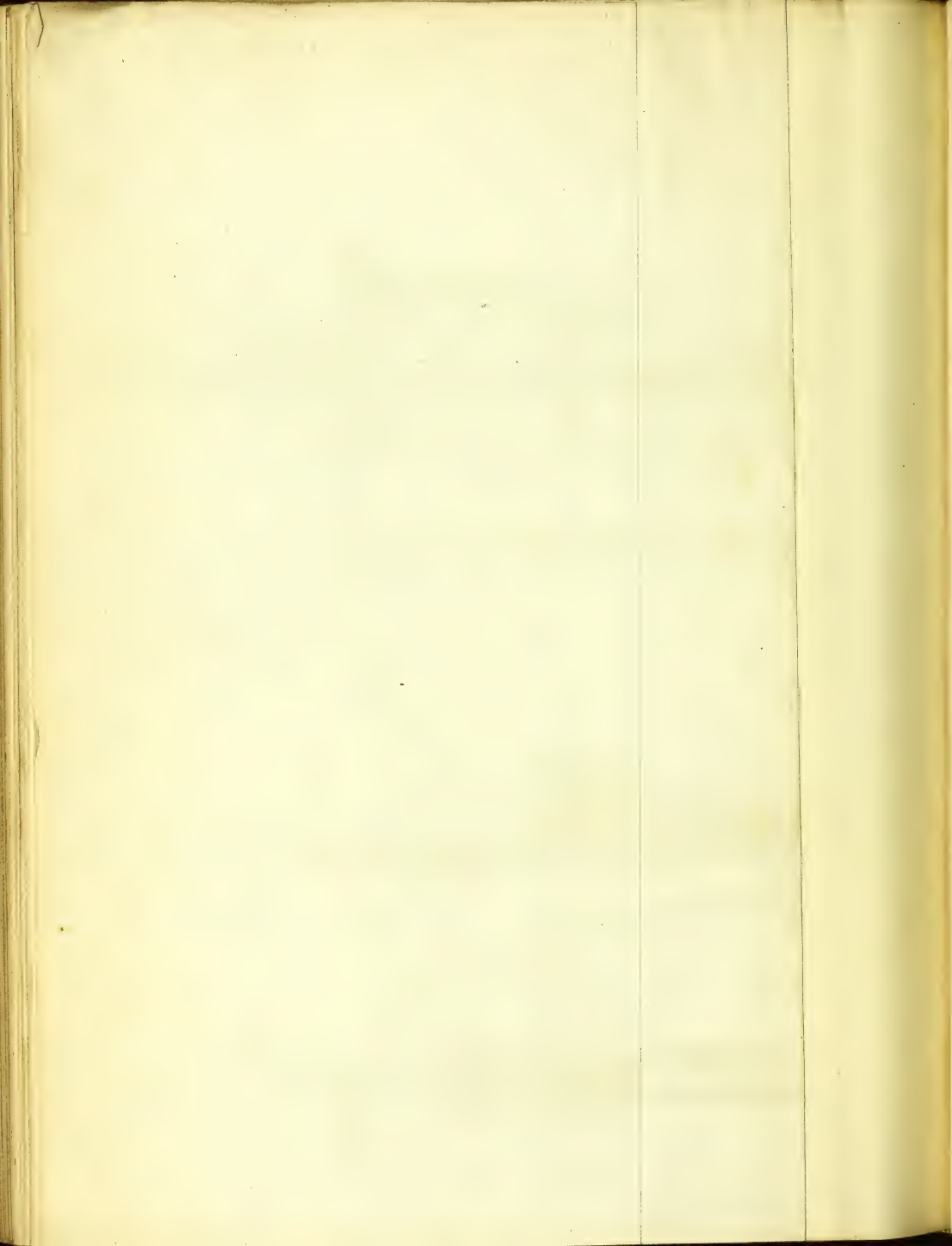
A FRIGATE OF 38 GUNS.

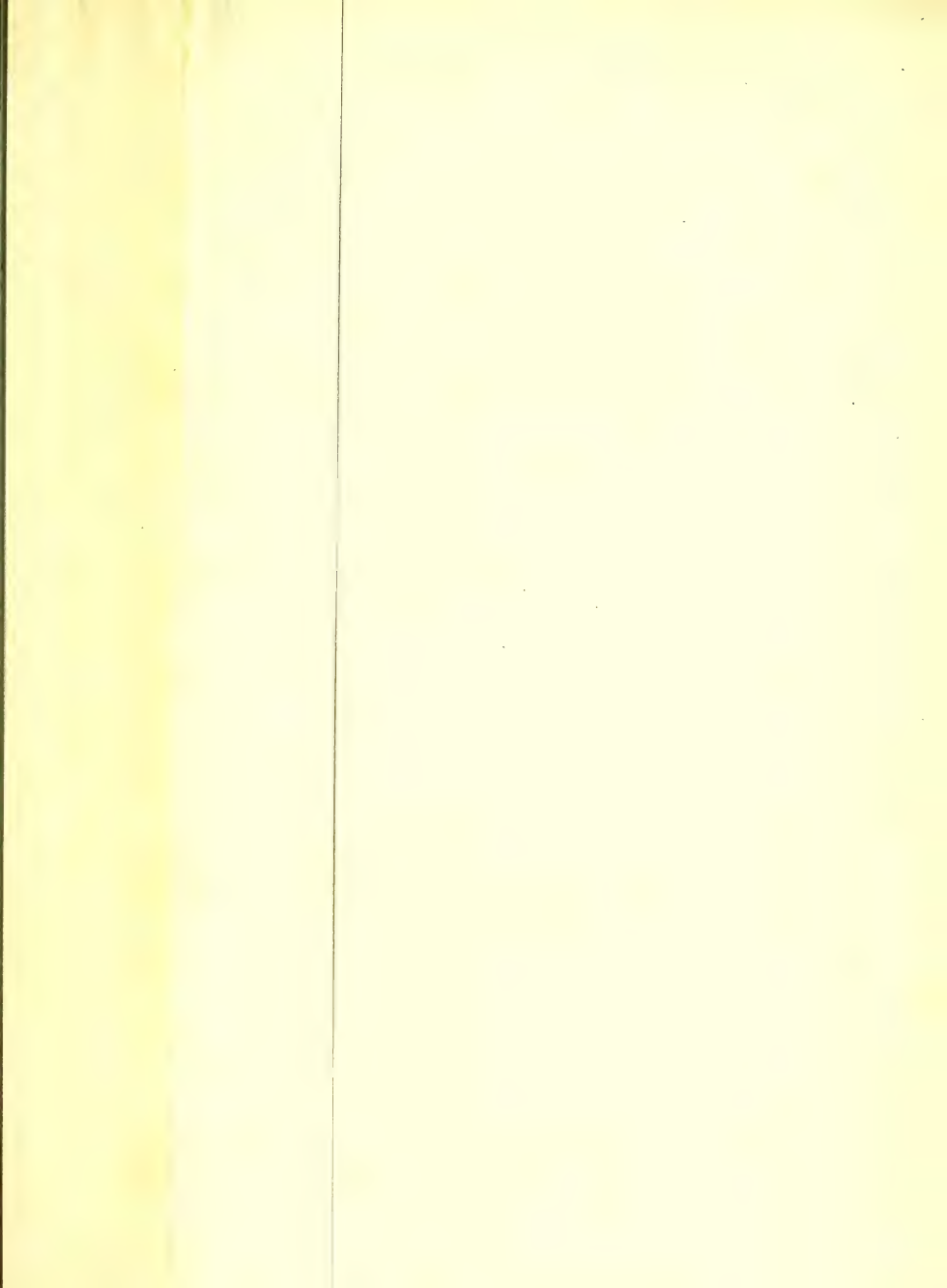


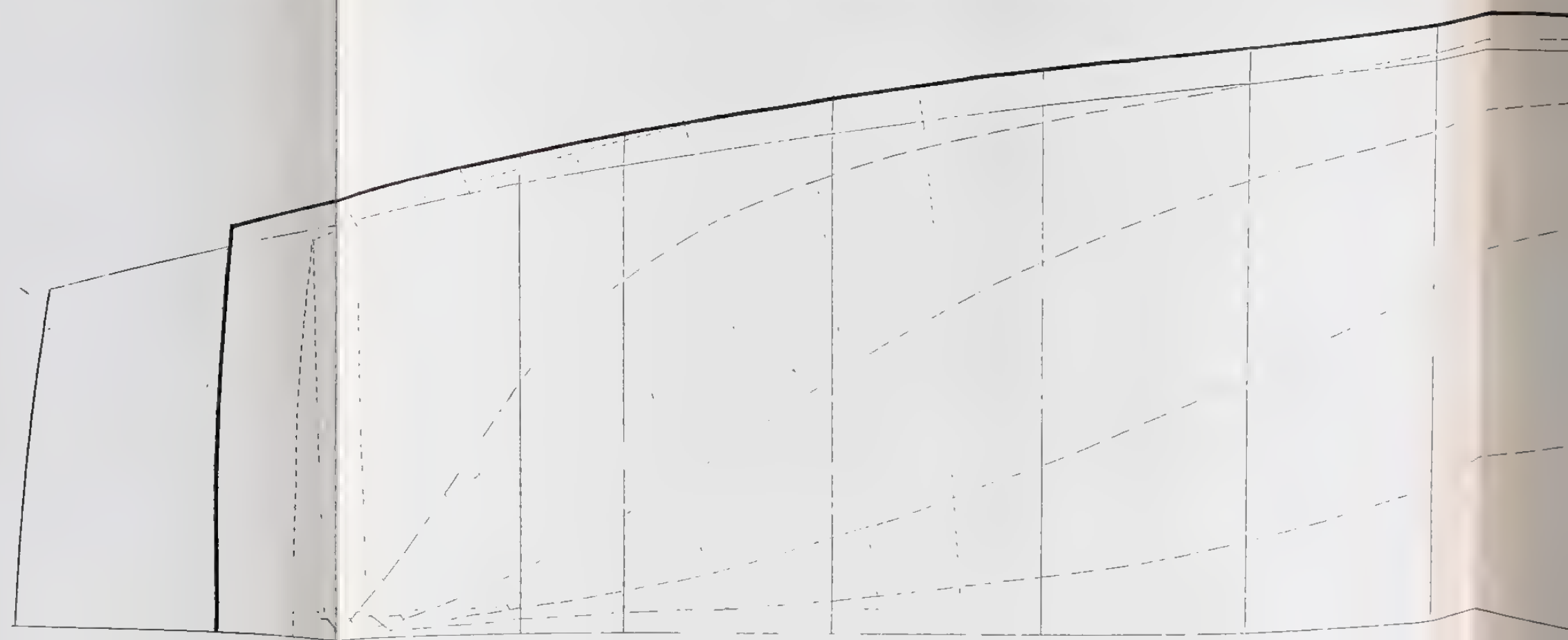
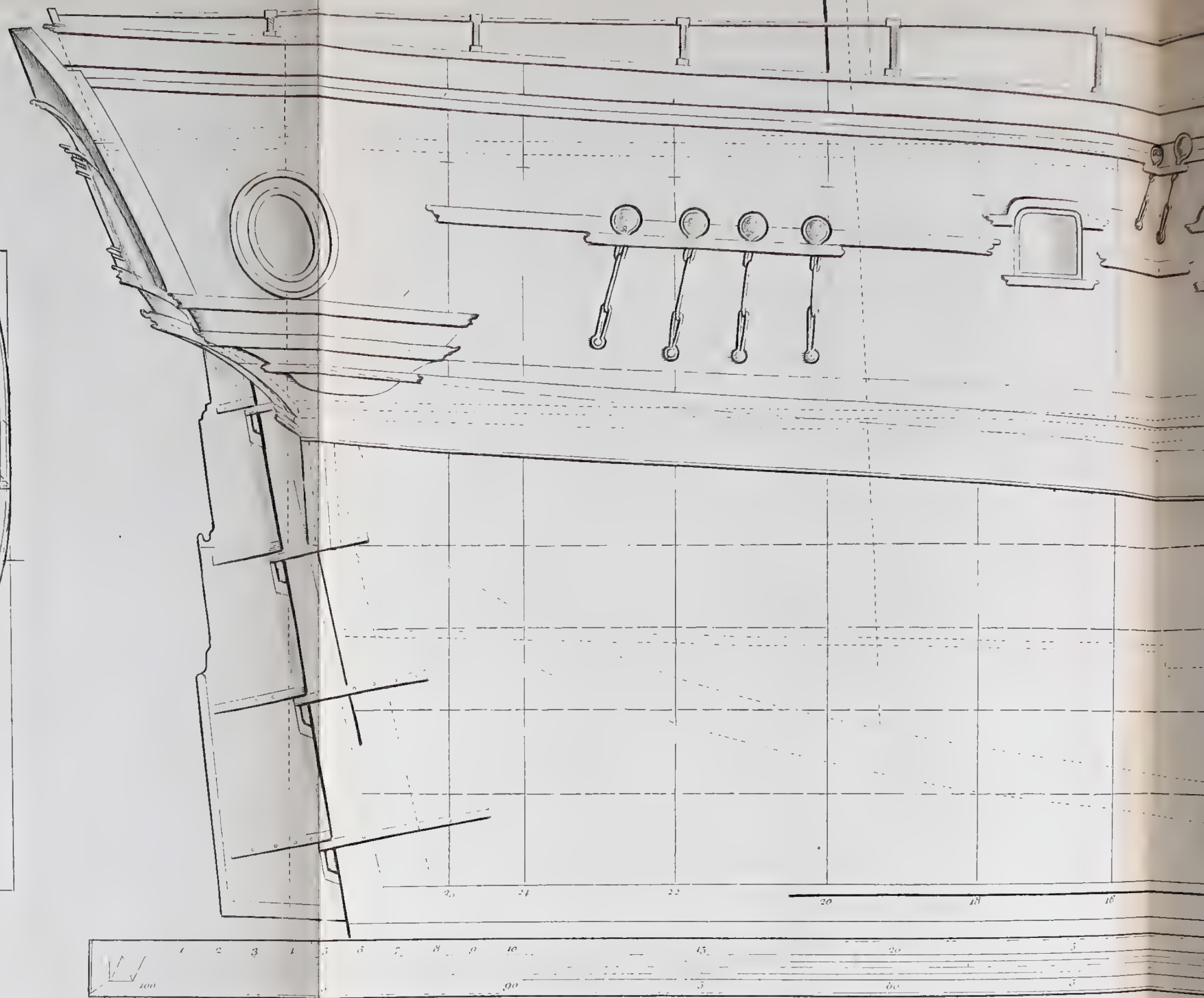
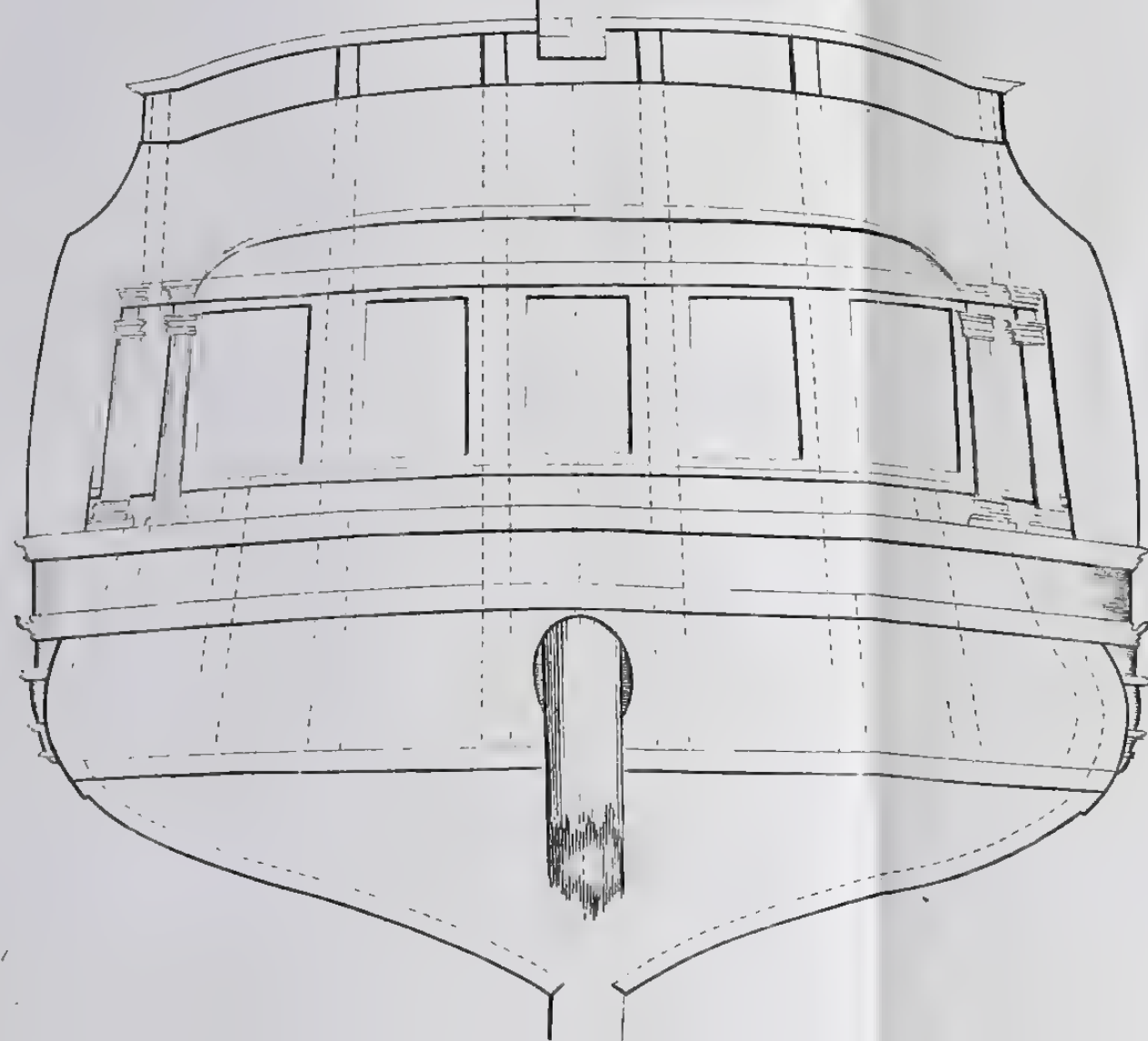
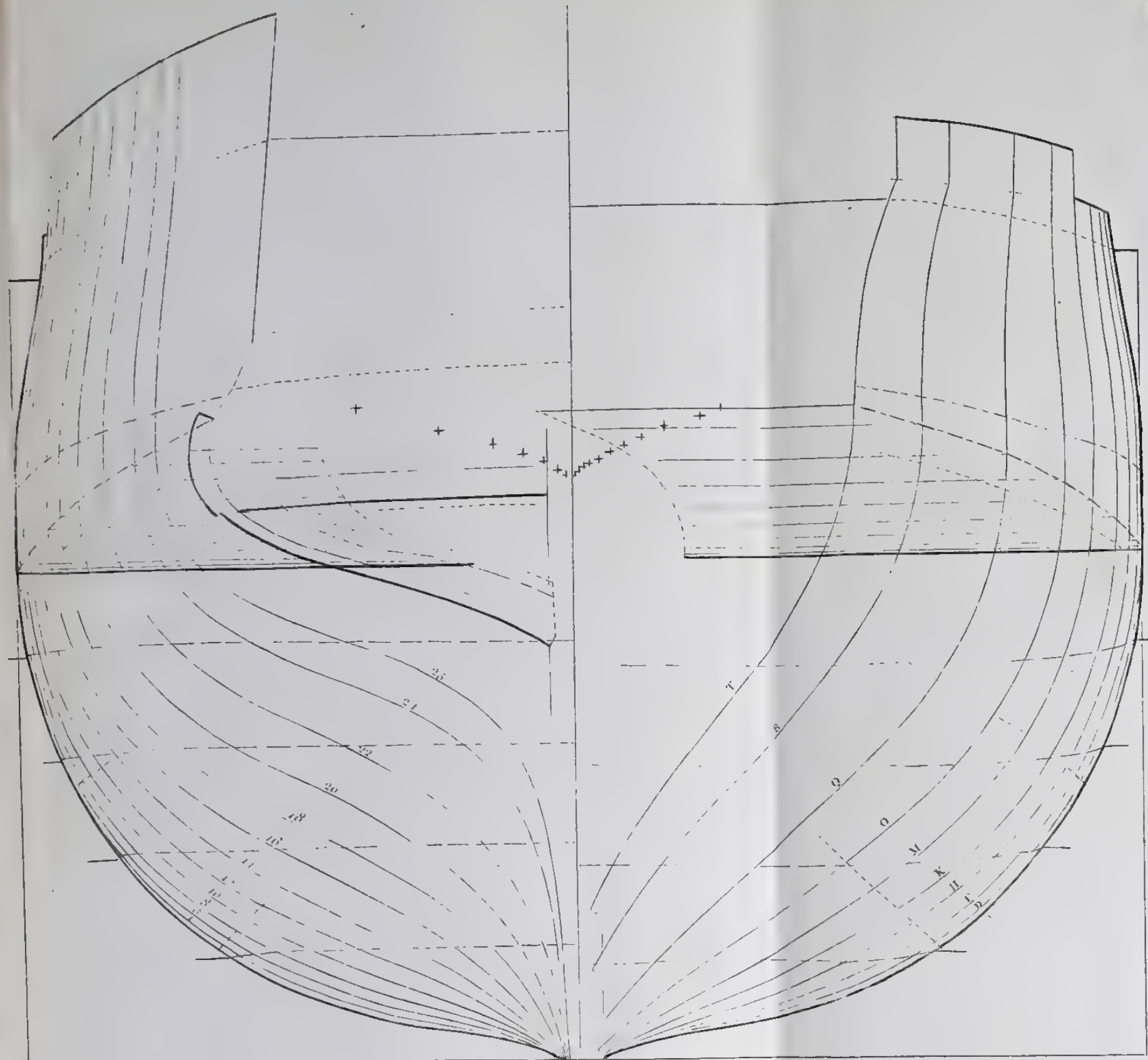












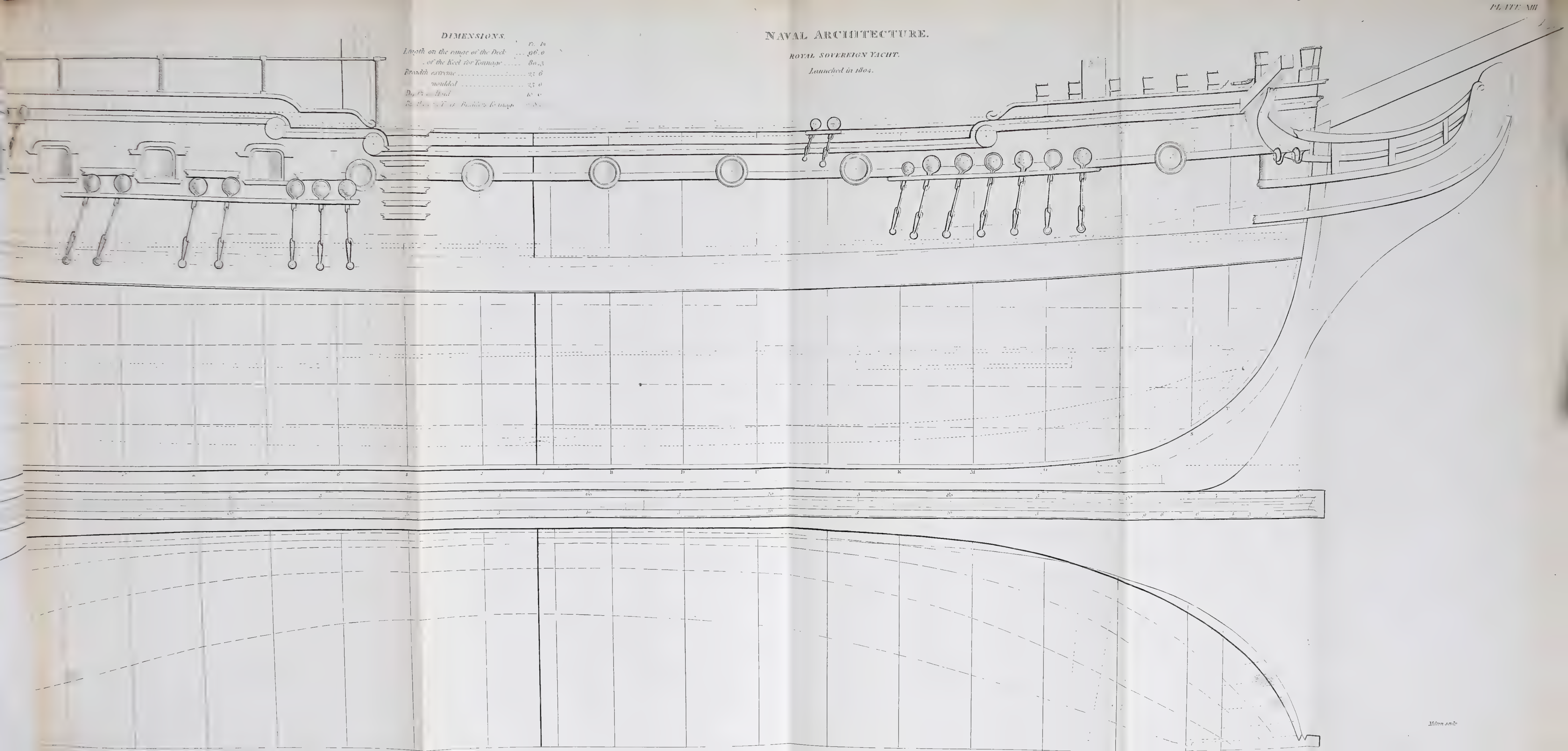
NAVAL ARCHITECTURE.

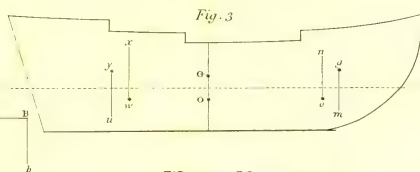
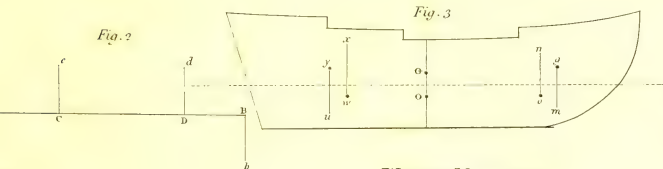
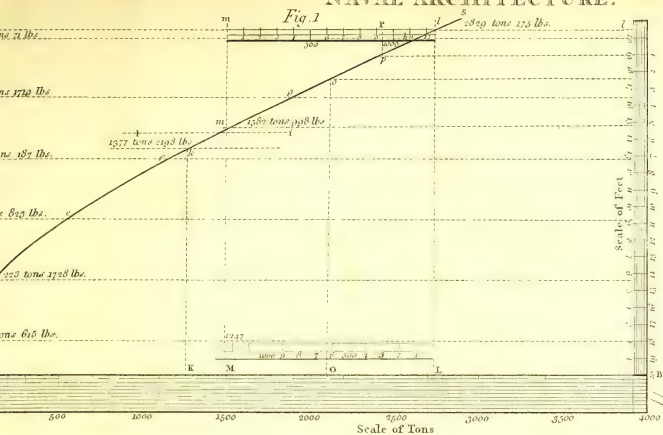
ROYAL SOVEREIGN YACHT.

Launched in 1804.

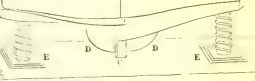
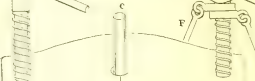
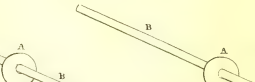
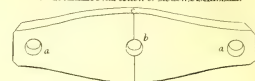
DIMENSIONS.

Length on the range of the Deck	96.0
of the keel for Tonnage	80.5
Breadth extreme	25.0
moulded	23.0
Depth of hold	10.0
Displacement	1000





*Hill's Machine for drawing Bolts.
See Mechanics direction of Motion, PLATE XVIII.*



WHOLE-MOULDING

